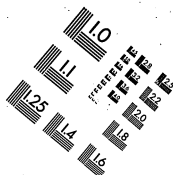
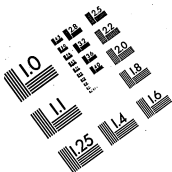




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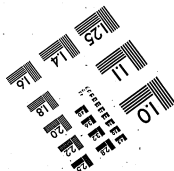
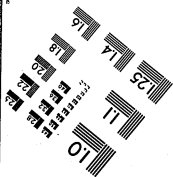
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Centimeter



Inches



# Thomas A. Edison Papers

## A SELECTIVE MICROFILM EDITION

### PART II (1879-1886)

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Frederick, Maryland  
1987

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**Thomas A. Edison Papers  
at  
Rutgers, The State University  
endorsed by  
National Historical Publications and Records Commission  
18 June 1981**

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**START**

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THOMAS A. EDISON PAPERS  
A SELECTIVE MICROFILM EDITION  
PART II  
(1879-1886)

REEL 58

DOCUMENT FILE SERIES (DOC-18)

D-81-026 through D-81-035  
("Electric Light - Edison Electric Light Company" through  
"Exhibitions - Paris Electrical Exhibition")

**1881. Electric Light - Edison Electric Light Company (D-81-026)**

This folder contains correspondence, reports, essays, and other documents relating to the business of the Edison Electric Light Company. Much of the correspondence is by Sherburne B. Eaton, vice president and general manager of the company; by Calvin Goddard, secretary; and by Grosvenor P. Lowrey, Edison's legal advisor. Included also is a memorandum by Edward H. Johnson, entitled "Edison electric light stock considered as a speculative holding for the ensuing quarter."

Approximately 60 percent of the documents have been filmed. The following categories of documents have not been filmed: routine notices for meetings of the board of directors; form letters; bills and receipts.

THE EDISON ELECTRIC LIGHT CO.,  
5 BROAD STREET.

MURRAY GREEN, Pres.,  
H. M. SULLIVAN, V. Pres.,  
E. F. FARMER, Treas.,  
C. GREENE, Secy.

New York, Jan 10 1887

file  
Dear Sir

A special meeting of the  
Board of Directors of the Edison  
Electric Light Company, will be  
held on Tuesday January 11  
at 230 PM at the office of the  
Company. To act upon the  
resignation of the Vice President  
and in case of its acceptance  
to elect his successor

By order

C. Goddard Secy  
T.

Myrt Jan 14 87  
T Edison

Will you come in  
tomorrow to execute  
contract  
Goddard

John K. Porter.  
Gerrard H. Lowrey.  
Chas. Francis Stone.  
Gen. S. Hamilton.  
Wm. L. Porter.

P.O. Box 1830.

Porter, Lowrey, Stone & Stone  
Attorneys & Counsellors at Law  
No. 13 Broad St. New York.

Jan. 19<sup>th</sup>

1880.

Dear Edison

Eaton has read the  
inclosed & approves - I have signed it  
- If you will do so & return it to me  
I will deliver it. Goddard fur-  
nishes three shares which calls for  
thirteen & a half from each of us  
- Goddard will get preference for  
his no doubt



G. P. Lowrey

Jan 15 - 1884

S. B. Eaton Esq.

Dear Sir

It is expected that you will undertake important duties in connection with the Edison Electric Light Company as one of its officers; and we take this method of stating the arrangement made between us last summer, as part of the inducement to you to give up other business and undertake that of this Company.

We are to give you a call upon each of us for fifteen shares of the present capital stock of that Company at the price of one hundred dollars per share, on the following conditions:

First; the stock is to be taken every six months in blocks of five shares and paid for in cash, until the whole option is availed of. Second: the option will terminate whenever you shall cease to

[ENCLOSURE]

be an officer and actively engaged in its affairs for any reason whatever.

Our object in giving this call is to secure your entire time and service for the Company and thus for our interest in it. We are confident that those services will possess special value over and above the services of other men whom we might employ.

It may turn out that we and you should be mistaken in our estimate of your probable usefulness, while you would still remain an officer and actively engaged. In such case your legal right would still be complete, and we make this statement only that the moral basis and inducement to us shall be thus evidenced in case we should ever wish to appeal to it. We do not foresee or expect such occasion; but it is possible that there might be some unexpected failure of consideration on your part which we should all agree would justify -

[ENCLOSURE]

us in asking you to give up your legal right.  
None such, we confidently believe, could  
occur except on grounds so clear  
that the good faith of all of us would  
compel an agreement as to what is right.

To give you the proper security we will  
deposit the fifteen shares each with  
Mr Charles Francis Stone, subject to  
your call and payment in accordance  
with this letter.

We shall ask other stockholders to  
participate with us in this matter  
according to their interests, and have  
pleasure to inform you that Mr Calvin  
Goddard has already done so.

Very Respy Yours

M. P. Lowrey

Thomas A. Edison



OFFICE OF  
J. G. SANDS.  
67 BROADWAY,  
Room 16.

Newbury Mining Exchange.

New York, Jan'y 19<sup>th</sup> 1881.

Dear Prof. =

The gentleman I expected to see regarding affairs will not be down until 3 P.M. will then see him and if convenient would like to have you drop in to room 16 No 67 Broadway when I will be able to tell you all about the plan and my plan regarding it - there is no question the affairs would suit you - Please advise me at this address if you will come.

Got a telegram from Mac last evening - says he will be here next month -

Yours sincerely  
J. G. Sands



2.4 in Chicago

Western Union Telegraph Company.  
President's Office  
New York, Jan'y 25, 1881

C. Goddard Esq. Secy  
Edison Electric Light Co.

This will be  
handed you by Mr. F. W. Jones  
our circuit manager, who  
is requested by the authorities of  
the City of Chicago to obtain  
information as to are the  
electric lights in operation.

This is an important matter  
to us and I suggest that Mr.  
Edison himself have an  
interview with Mr. Jones.

Truly Yours  
Samuel Jones

Mr. J. A. Jones &  
Morris Green

J. A.

J. A. Edson

Referring to Dr.  
Green's letter within, I  
send Mr. Jones to you  
that he may obtain  
full information as to  
our system.

Yours truly,  
C. Edwards

*Ex America*  
THE EDISON ELECTRIC CO.,

3 BROAD STREET,

NEW YORK, N.Y.  
R. M. GILMAN, V. Pres.  
E. J. FARR, Treas.  
G. GILMAN, Sec'y.

*J. P. Gator*  
*not by the Jan 1881*

T. A. Edison Esq.

Manhattan

Regarding the new estimate  
which you sent you would prepare,  
giving the cost in the long run (10)  
per cent. of plant for one station,  
with full detail figures so. may I  
ask if it will be convenient  
for you to forward it by the  
first of next week? The sooner  
we have it the better, as the Executive

Committee is engaged in determining matters in which such an estimate will be an important factor -

J. H. [unclear]

L. H. [unclear] - L. P.

WM. H. ALDEN, JR.

MORRIS E. STERN.

ALDEN & STERNE,

REAL ESTATE BROKERS,

OFFICES: 2 WEST 14TH STREET, COR. FIFTH AVENUE,  
108 BROADWAY, COR. FINE STREET,

NEW YORK *June 31* 1881

Thomas A. Edison  
Mentor Park N.J.

Dear Sir: Have the Edison  
Electric Light Co. marked  
me where they intend to  
locate their offices. We have  
had several parties after the  
house No. 60 5th Ave with which  
you are well pleased, and would  
very much like to know from  
you our calculations to save it  
that we can give them a de-  
cided answer. Hoping  
to hear from you soon  
Very respectfully,  
Wm. H. Alden

Very Respectfully,  
Alden & Sterne

Address All Letters to No. 2 West 14th Street.

11-10-1918  
 N. J. Jan 31 '81  
 Albert Steine  
 No air  
 Terephthalic acid



NY 2<sup>d</sup>  
Thos Edison

Ultimatum is three years  
lease at Seven Thousand  
dollars. What do you say?

S. B. Eaton

15/paid

NY 3<sup>d</sup>  
Thomas A Edison

Feb 3<sup>d</sup> 81  
1/31

Definite answer this evening  
but am almost certain that  
the house will be secured  
Will telegraph you again  
before night

S. B. Eaton

20 paid  
209

Ny 5- Feb 3, 81  
J A Edison

Lease signed sealed and  
delivered and our Janitor  
in possession

J B Eton

THE EDISON ELECTRIC LIGHT CO.,  
9 BROAD STREET.

THEODORE GRISWOLD, PRES.  
R. M. GILLMAN, V. PRES.  
E. F. FARMER, TREAS.  
C. GORDON, SECY.

New York, Feb'y 7th 1887

Mr Edison

J. A. Edison, Esq.

I have the  
pleasure to <sup>inform</sup> you that  
I am telegraphing  
you.

Dear Sir:

The Newark City Government  
will visit Menlo Park tomorrow, Tuesday evening,  
on a special train which will leave Newark at 7:30  
and will leave Menlo Park at 9:30.

It will be well to furnish a lunch of hot  
coffee, sandwiches & cigars. I will take care of the  
cigars and will see that they are on hand but I  
must ask you to provide the hot coffee and  
sandwiches. I suggest that enough be provided  
for say one hundred men & that the coffee & sand-  
wiches be ready before the arrival of the guests at  
Menlo Park and be kept ready for people to help  
themselves as they please from the time they arrive un-  
til they depart. I would not set any table but have  
the coffee and sandwiches spread on a side table  
where people can take them at any time during the  
evening whenever they please and eat them stand-  
ing up.

I will come down in a car of Newark  
train and may possibly invite myself to dinner  
at your house tomorrow evening.

Very truly Yours,

Wm. Edison

J. A. Edison

T. Prisk

Blank No. 1.

# THE WESTERN UNION TELEGRAPH COMPANY.

This Company transmits all telegrams, except money orders, on condition, binding its liability, which has been assumed by it, to the effect that the sender of the telegram shall be responsible for the payment of the same, and the Company will not be liable for any loss or damage to the telegrams or the property of the sender.

THE COMPANY IS AN INCORPORATED COMPANY, AND ITS OFFICES ARE LOCATED AT NEW YORK, N. Y., AND AT THE FOLLOWING PLACES: ALBANY, N. Y.; ANDERSON, S. D.; ANKENY, IOWA; ARIZONA, ARIZ.; ARKANSAS, ARK.; CALIFORNIA, CAL.; CANADA, CAN.; COLORADO, COLO.; CONNECTICUT, CONN.; DELAWARE, DEL.; FLORIDA, FLA.; GEORGIA, GA.; ILLINOIS, ILL.; INDIANA, IND.; IOWA, IOWA; KANSAS, KAN.; KENTUCKY, KY.; LOUISIANA, LA.; MAINE, ME.; MARYLAND, MD.; MASSACHUSETTS, MASS.; MICHIGAN, MICH.; MINNESOTA, MINN.; MISSISSIPPI, MISS.; MISSOURI, MISSOURI; MONTANA, MONT.; NEBRASKA, NEBR.; NEVADA, NEV.; NEW HAMPSHIRE, N. H.; NEW JERSEY, N. J.; NEW MEXICO, N. M.; NEW YORK, N. Y.; NEW ZEALAND, N. Z.; NORTH CAROLINA, N. C.; NORTH DAKOTA, N. D.; OHIO, OHIO; OKLAHOMA, OKLA.; OREGON, ORE.; PENNSYLVANIA, PENN.; RHODE ISLAND, R. I.; SOUTH CAROLINA, S. C.; SOUTH DAKOTA, S. D.; TENNESSEE, TENN.; TEXAS, TEX.; VERMONT, VT.; VIRGINIA, VA.; WASHINGTON, WASH.; WEST VIRGINIA, W. VA.; WISCONSIN, WIS.; WYOMING, WYO.

A. H. BAKER, Secy. J. H. C. NORVIN GREEN, President.

Dated October 14, 1881

Received at WESTERN UNION BUILDING, Broadway and Day Street.

G. P. Sawrey, Secy.

Stone Three 3

Broad St

City

Tell Eaton to

see him first

if in town

publishing a card

concerning

thermostatic

regulator

G. P. Sawrey

1924 H

530

COKE

READ THE NOTICE AT THE TOP.

American High

40

Feb 20th 1884

Telegram to Paris to

make appt. with E. about

Thermotaxis regulator.

dis  
Mr. Chrom - Please for

to Mr. Lancyo & I  
will join you there

as soon as I can

set away for home -

Mr. Lancyo is at the town

Hotel, opposite Hotel

Bismarck

LEE



20th Nov. 1881.

*Private Letter*

Office of Charles Pratt & Co.  
No. 128 Pearl St.

New York, Feby. 10th, 1881.

Edison Electric Light Co.,

Menlo Park, N.J.

Gentlemen:

*Enclosed  
Feb 10/1*

Enclosed we beg to hand statements of account of the  
E. E. L. Co. and Mr. T. A. Edison. Please look over same and see  
if we have made the credits to the proper accounts. If so, kindly  
hand us check for, say \$312.27 to cover Mr. Edison's statement en-  
closed.

Please advise if in future we shall keep the entire account  
in the name of the E. E. L. Co., or if a portion will be for the ac-  
count of Mr. Edison personally.

Yours truly,

*Wm. Carman* *Chas Pratt & Co.*

312 <sup>27</sup> is o.k. - for our books.

*Ernest*

1881-02-17

THE EDISON ELECTRIC LIGHT CO.

175 N. 5TH STREET

NEW YORK, N.Y.

S. M. GALLAGHER, V. Pres.

E. P. RAYMOND, Treas.

G. GORDON, Sec'y.

New York, 17 Feb 1881

Mr. Wilson -

Mr. Holland is now ready to  
close his book if we will tell him  
when to come here material to  
light Portland and he wants the  
Company to guarantee the time  
when this material will be ready.  
I think it best you will tell him  
that he is to be ready at 11 to 12 a.m.  
Monday -

The limits in contract are

Wish to complete the Lamp  
but wish to put you out with  
it to be at once - The con-  
struction of the present one is the  
best to be made any -

Yours truly  
Wm. H. Miller

Wm. H. Miller  
1845  
Boston



Received of J A Edison certificate  
of stock in Edison Electric Light  
for ten shares.

Feb 21 - 81

Wm. Russell

65 5th Ave.  
Feb 22 1881 -

I hereby give Russell,  
one share of the (American)  
Edison Electric Light  
Stock. will give him  
Certificate soon as I  
get time to go down  
town

J A Edison

40

Law Offices of  
Dickerson & Dickerson.

A.T. Staats Zeitung Building, City Hall Square.

Edmund N. Dickerson  
Edmund N. Dickerson Jr.

New York. Feb. 28<sup>th</sup> 1881.

Thomas A. Edison Esq.  
65 Fifth Ave.  
City.

My Dear Sir,

Mr. Dickerson Esq. is in Al-  
bany or would have acknowledged re-  
ceipt of your certificate for five shares  
of stock which has been duly received,  
and for which accept our thanks.

Yours truly  
Dickerson & Dickerson



JOHN D. ROBERTS,  
345 Broadway,  
P. O. Box 724.

New York,

March 10<sup>th</sup> 1881

Dear sir:

Strs of 9<sup>th</sup> Div. Cover-  
ing Certificate for three shares  
of stock of the Edison Electric  
Light Company, received.  
Yours resptly  
John D. Roberts

Thos. A. Edison & Co.  
65. Fifth Avenue  
City.

<sup>to</sup>  
American Light  
Rocky Mt. Coalfields  
Trans. EEC Stock.

March 10<sup>th</sup>  
Roberts

Please ask Mr. Edison to send the certificates  
of stock, endorsed over to me, to my address, by  
mail, No. 164 West 22<sup>nd</sup> St.

1120 John P. Roberts.  
/ cent

T. A. EDISON,

Menlo Park, N. J., Mar 30 1881.

Thos A Edison Esq

Dear Sir

In answer to

yours of 28<sup>th</sup>

The total cost of the Light experiment  
to Mar 22, 1881 129.367.84

Received from Co 126.566.54

Bal due statement enclosed 2801.30

Now in regard to the loss to the Light  
Co there are none as it has already  
been taken out with these exceptions  
Goods which are now going away  
of which I have a memorandum  
but I understood that the E. Light  
Co. would bill them to the Lamp Co.  
direct - I am preparing such a  
bill and will bring it to you  
when it is done - to our own if  
possible

Very truly

W. A. Edison

## The Edison Electric Light Company,

65 Fifth Avenue,

New York, April 19th 1881.

### TO THE STOCKHOLDERS OF THE EDISON ELECTRIC LIGHT COMPANY:

The Edison Electric Illuminating Company of New York (Capital \$1,000,000, in shares of \$100. each) having obtained from the Common Council of the city of New York the right to lay wires in the streets, and proposing to introduce the Edison Electric Light into the public buildings and private houses of the City, and to furnish power by means of electricity for industrial and domestic purposes, has authorized \$750,000. of its Capital Stock to be offered for subscription at par to the Stockholders of the Edison Electric Light Company.

Stockholders of the Edison Electric Light Company will be permitted to subscribe to this stock of the Illuminating Company in the proportion of three shares of the latter for every two of the former standing in their names on the books of the Company at the date of closing the same. As no subscriptions can be received for fractional parts of a share, stockholders of the Light Company may subscribe for the number of full shares in the Illuminating Company next above or next below the fractional amounts to which an exact *pro rata* distribution would entitle them.

Payments will be required on such subscriptions as follows, viz: \$5. per share at the time of subscription; \$20. on allotment; \$25. on the first day of June, 1881; and the remaining \$50. per share will be called in, on ten days notice, as fast as money is required, but not earlier than \$25. July 1st, and \$25. August 1st, 1881.

Notice is hereby given that the transfer books of this Company will be closed for the purpose of this subscription, on Saturday the thirtieth day of April, 1881, at 2 o'clock P. M. and will remain closed until 10 o'clock A. M. Wednesday the eleventh day of May, 1881.

Notice of the number of shares of the Illuminating Company's stock to which each stockholder of the Light Company is entitled to subscribe, together with a blank form of subscription, will be sent to each stockholder of the Light Company immediately after the closing of the transfer books.

By order of the Board of Directors.

C. GODDARD,  
*Secretary.*

The Edison Electric Light Company,

65 Fifth Avenue.

New York, April 30th 1881.

To *Thomas A. Edison*

The terms of payment on subscriptions to the stock of The Edison Electric Illuminating Company of New York, which were set forth in this Company's circular of the 19th, inst., have, by an arrangement with the Illuminating Company, been changed as follows, viz: five dollars per share at the time of subscription; ten dollars May 15th; ten dollars on the first day of June; ten dollars on the first day of July; fifteen dollars on the first day of August; and the remaining fifty dollars per share to be called in, on ten days notice, as fast as money is required, but not earlier than twenty-five dollars September 1st, and twenty-five dollars October 1st, 1881. Interest at the rate of six per cent. per annum, will be allowed on any instalments paid in advance of the dates named.

The stock of this Company standing in your name, at the closing of the transfer books this day, being *960* shares, you have the privilege of subscribing for *1440* shares or any lesser number in the Illuminating Company. If you desire to avail yourself of this privilege please execute and return to the undersigned the form of subscription herewith enclosed, together with your check for \$5. per share of your subscription, drawn to the order of the Treasurer of The Edison Electric Illuminating Company of New York.

Your subscription must be delivered at the office of this Company before ten o'clock A. M. May 11th, at which time the option now given will expire.

By order of the Board of Directors.

C. GODDARD,

Secretary.





American  
Right

May 14th 1881

Copy of paper  
to Batschler  
E. B. L. L. L.

26

219  
106  
2

New York, *June 3* 1881

J. A. Edison Esq

Dear Sir

The Lamp Company has called upon us to approve numerous orders for lamps heretofore drawn upon it by yourself. Mr Johnson and Dr. Moses and has requested that hereafter all orders shall be approved by this Company. under the terms of the contract between the Lamp Co and this Company, this is quite right, and I shall at once prepare the requisite blanks, and if you will, in future send your orders to me. I will see that they are sent to the Lamp Co in proper form and will thus be able to keep a record in this office which is absolutely necessary to the proper transaction of the business.

Be good enough in each case to name the purpose for which the lamps are required, that we may know how to dispose of the bills

Yours truly  
*C. Goodenough*

19<sup>th</sup> SeptemberS. D. Eaton Esq  
Vice PresidentEdison Electric Light Company  
65 Fifth Avenue  
New York

Dear Sir

I beg to enclose you herewith statement of expenditure on account of experiments on the Central Station Dynamo amounting to \$6171<sup>2</sup>/<sub>100</sub>.

As you well know this experimenting has been done on the machine which is now on its way to Paris but in as much as it has been done with a view to perfecting the machines to be used in the Central Station I tender the statement to the Electric Light Company and request payment under my agreement with them by which they undertake to pay the cost of my experimenting on Electric Light.

If the Light Company had been obliged to pay for the machine itself as well as the experimenting the cost to them would

02

188.  
2

have been about \$2000, without the machine  
being of any practical value to them, as  
it would not have been possible to use it  
in any Central station. By the machine  
being taken by the European Company, the  
Light Company is saved an expense of about  
\$6000

This expenditure (\$6171.<sup>20</sup>/<sub>100</sub>) is cash  
paid out of my pocket and I shall be  
glad if you will arrange for me to be  
reimbursed the amount by Friday as I  
need the money to meet my engagements  
this week

Very truly Yours

Thomas A. Edison

1881-09-15

Edison Electric Light Stock considered as a speculative holding  
for the ensuing quarter.

STATEMENT.

In the fall of 1878 Thomas A. Edison made the assertion to a newspaper reporter that he was about to enter the Electric Light field of exploration and ~~felt~~ felt confident that he had found the true solution of the great problem of ~~the~~ years, viz., the sub-division of the electric current and its distribution among innumerable points over large areas from a common source of supply. The great reputation which Mr. Edison had just made by the invention of the Phonograph carrying his name as it did from without the smaller circle of the professional to the larger one of the non-professional caused his announcement to have an effect which he could not have anticipated. The first read the colored reports of the various newspaper interviews with the great inventor with that incredulity which is always born of a knowledge of the obstacles to be surmounted and of previous failures of others in overcoming them. The latter and much larger circle read these same reports with blind confidence in the inventor of the Phonograph. Hence it became the almost universal belief that the whole problem was solved and it was fully anticipated that within a space of two or three months at least Mr. Edison's light would be seen everywhere and gas would utterly disappear to be known no more forever.

The newspapers were of course eager to feed this sensation as they would any other which lent interest to their columns. Hundreds of interviews were made up in the Editorial rooms and in the private sanctuaries of that Great American Institution the "Reporter" having no other basis than a vivid imagination. Thus it came to pass that the general public saw only a great consummation while the professional mind found so much claimed that was absurd that they refused to believe anything and sought by argument and ridicule to prove that not only had nothing been accomplished but that the problem was an impossible one. An antagonism was thereby created between the great body of the so called scientific professors, especially those immediately engaged in this branch of scientific work, and Mr. Edison and his friends and believers the general public. The effect of this was to place Mr. Edison in a false and embarrassing position. Well knowing however that he had found the true principle of accomplishing the work and thus ultimately justifying all that had been so prematurely claimed for him and confident in his ability to perform an immense amount of labor in an incredible short time, he gainsayed nothing but went earnestly to work to evolve from out the chaos of the unknown the order and proportion requisite to put his ideas into practical shape. No mortal man can tell even approximately the lapse of time required to accomplish a task of this character since the very first obstacle that arose might be the last or it might be only the forerunner of a host of others. Mr. Edison made the or-

ror, and has continued to make it in all allusions to the time when his work will be finally finished, in assuming that the difficulty of the moment was the sole one, and it surmounted the work was done. This error, not of judgment so much as of a desire to quell the rising disquietude of the public and his friends, is the only one he has made. In the matter of his work he has absolutely made none. Every principle originally laid down has been found to be correct, the means and methods by which they have been utilized alone have been played upon to effect the greatest commercial harmony.

A considerable disappointment and a consequent reaction of the popular mind has been the resultant factor in all this and now we find a lack of confidence almost as universal as the ~~xxx~~ earlier confidence and having even less foundation for its existence.

Thus when Mr. Edison finally made a demonstration at Menlo Park in December 1879 although on a scale of comparative magnitude it fell short of conviction and his demonstration consisting of 700 lamps supplied from one source and distributed over an area of one mile square, fed by an aggregate of 8 miles of underground wires and supplying all the light used in the factories, stores, dwellings, shops &c. within the compass of this mile, was still looked upon as simply a Laboratory Experiment. From this it became apparent that the thing must be put into practical operation

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on the premises of the public where all the world could see for themselves. The Menlo Park <sup>Edison</sup> was thereupon promptly abandoned Mr. Edison and his entire corps of assistants and workmen coming to New York and immediately inaugurating steps to establish his system here on a scale which will absolutely and permanently displace gas and other artificial lights from a densely populated district of the city. One mile square this work is rapidly drawing to completion.

The object of this paper is to plainly state the facts in such a way as to enable the reader to form a judgment as to the result upon the public mind and consequently upon the stock of the Edison Companies of the final opening up to the public gaze and use of this large district. Will such a complete demonstration of Edison's success cause a material rise in the value of his shares?— that is to say when Edison shall successfully supply some 20,000 lamps to interiors from a single source on such terms as, while being below the price of gas, will still pay him handsome dividends will the public accept the problem as solved and seek investment in the Edison stocks?

#### Edison's System.

Edison early determined to follow a certain course in order to the sooner reach complete success which was at great variance with that pursued by other inventors. He has, as it transpires, wisely adhered to his line of procedure in spite of strong



opposition from within and without his own immediate associates.

Chief among the things resolved upon were the following:

First. That the true and only method of an indefinite subdivision and distribution of the Electric Light was what is known as the "Incandescent" principle. All previous attempts had been made on the "Arc" principle and all such efforts have as yet proven absolute failures.

Second. That to create a successful rival, commercially, Gas lighting on electric system must be on the same scale and as simple and practicable in all its details. Otherwise its supervision would entail fatal costs and annoyance and that in consequence the electricity must be generated off the premises of the consumer and sent to it through the streets as in the case of gas. This has been pronounced impossible for the three following reasons,

A. That a small constant and steady light requiring only the attention of ordinary domestic servants could not be produced.

B. That if such a lamp was produced the amount of copper for supplying a vast number of them from a common source of supply would be so vast as to swamp the enterprize by the investment in copper alone.

C. That further, an electrical generator of sufficient capacity to render such general lighting practicable could not be successfully operated for the reason that so great an amount of electricity could not be controlled. It would be as irresistible

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as a thunderbolt"

All three of these impossibilities have become so generally accepted as actualities that it is scarcely worth recalling the earlier prophecies except to illustrate the magnitude of the work Edison has accomplished by the negative evidence they offer.

Third. That his only rival in a commercial sense would be the Gas interest - that in consequence his constant aim should be to attain in every department of his work the highest possible economical ~~mich~~ rather than the greatest maximum capacity.

As a result of this course he has fixed as the standard of light to be derived from one lamp at 16 candles (a full gas-jet)-while it is capable of yielding as high as 30 or 40 (There is also another good reason for the adoption of another standard than the lamp is capable of, viz. softness and ease to the eye) His generator will ordinarily be drawn upon only for about sixty per cent of its actual capacity, because at that point additional production is only obtained at higher cost per unit of output. And so on throughout his entire system. Everything is calculated from its economical ~~mich~~ rather than from its full capacity, thus ensuring the lowest cost of production as well as a margin for the demands of emergencies.

Fourth. - That he would not allow any side issues to distract his time, attention and energy or that of his establishment from the main work in hand: In consequence of this he has

up to the present date absolutely declined all propositions however tempting to engage in what might be termed "Isolated" lighting—that is lighting with small individual machines. He has resolutely refused to inaugurate the legal steps requisite to enforce the rights granted by his patents notwithstanding that many audacious infringements of his patents are being made.

The wisdom of this course was at first disputed by his associates, but is now fully recognized since by virtue of it he has doubly fortified himself against successful competition. His system is already so complete in every detail of practical and commercial importance that were his patents to offer him no protection whatever he would still be absolutely alone in the field of real competition with gas—none other having so much as contemplated the work of Electric Lighting on a sufficiently comprehensive basis as to render them worthy of the attention of the gas interest. It would in fact require years for them unitedly to reach the stage now occupied by Edison, ere which time he would of course be proportionately advanced. It is not too much to say that if a combination of all other inventors and their product could be effected they would still be unable to do what Mr. Edison is now doing, and this aside from all questions of patents they would simply be physically unequal to the task from a lack of comprehension of the essentials. This belief is founded upon the knowledge of the obstacles Mr. Edison has overcome in rendering the three so-called "Impossibilities" accomplished facts, and it ex-

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plains why all the so so called rivals are so unanimous in proclaiming what Mr. Edison has done "impossible of accomplishment". Others to reach the same end would have to travel over the same ground and Mr. Edison has made it a point while publishing broadcast the ends attained to leave no traces of the paths he has pursued, and since no combination or aggregation of Mediocrity ever did or ever can equal in fertility of resource the single brain of genius he is not to be overtaken so long as he lives. This is his determination and will prove to be the final issue. By preserving secrecy as to the means of accomplishing the various ends Mr. Edison has rapidly entrenched himself in an absolute monopoly without educating others to the point of following him closely or anticipating him in the Patent Office. This he has been enabled to do by filing his applications for Patents and allowing them to remain unissued in the Patent Office to the full period provided by law during all which time he is of course constantly adding to or extending them as his experiments may suggest. Thus when they finally issue they are comprehensive and cover the ground broadly and completely forestall all claims of priority. Were Edison to appear in court at any time prior to the issue of his final Patents he would be compelled to show his hand fully. This would be a great disadvantage as there is no educator in scientific work equal to a legal contest over an invention. Every detail is expounded with such clearness as to be easily comprehended and naturally becomes full of suggestion to investigators. When Mr. Edison

does enter the courts it will be to show an invulnerability never before attained where so many or so valuable patents were concerned. No invention of any age has been so systematically or so thoroughly protected by a close study and application of the patent-law as has this of Mr. Edison's.

He has woven a web so compact that were it to be perforated in a hundred places it would still be an effective defence. The controlling features are already secured, so that Mr. Edison alone can operate a general system. Others even at the utmost can only do petty work in an isolated way.

#### The Edison Undertaking.

The Edison Company are now engaged in preparing their 1st. district in New York City. It is comprised within the following boundaries-Wall St.-South Spruce St.-North, Nassau St. West and the East River, East and has within its borders 1500 Gas Consumers, using upwards of 20,000 gas jets, each and every one of which it is proposed to supplant with an electric jet, or lamp. 1100 of these gas consumers have already signed contracts for the Edison Light and will require from 15 to 17000 lamps. Their premises have already been "wired" for these lamps and they only await the delivery of the electricity at their doors. This is to be effected as follows.

#### The System.

The plan is to establish a central station or source of

supply fitted up with the requisite Electrical Generators and distribute the electricity therefrom through conductors encased in Iron Pipes and laid underground to each and every consumer within the district. These conductors will be tapped by service conductors at each house and the electricity delivered through an Electric Meter, precisely as in the case of gas. No other apparatus will be on the Consumer's premises than the meter and the lamps.

Existing gas fixtures are being utilized for supporting the electric lamps, without interfering with the use of the gas, or detracting from the ornamental character of the fixture. Thus the consumer will have either gas or electricity between which he can make his own comparisons as to cost, quality &c. &c., or he may use both at one and the same time. Especial care has been taken to provide for this in order that the comparison which Mr. Edison court may be made by the public themselves. The consumer pays for the wiring and for the fixture attachments just as he does for gas pipe fixtures, but the lamps are supplied free of cost. They cost so little and they last so long that it has been decided to charge them up to the cost of producing the electricity, which can be done and the light be sold still for less than gas. The consumer therefore pays so much per "thousand" for his light. The amount he uses being recorded by the meter.

Present Condition of the Work.

The Central Station.

Two buildings Nos. Pearl St. have been secured and the work of fitting them for the reception of the machinery is well under way. It is fully expected they will be ready for occupation by November or December of this year.

The Central Station plant will consist of about 12 steam dynamo machines of 125 horse power each, with ample boiler capacity for producing the steam. There will be devices for regulating the electrical pressure for the entire district and means and methods employed for an absolute guarantee of the reliability of the light at all times.

No reservoir is required in the Edison system. All his engines are pumping, so to speak, electricity into one general conductor—thus if it should happen that one or even two of them should fail, it would only mean a slight fall of pressure and by no possibility a total or even a material interruption of the light in any part of the district. The boilers and steam engines for this station have been contracted for and are deliverable Oct. 1st. to 15th. They are all reported ahead of time. The electrical generators are being manufactured by Mr. Edison at THE EDISON MACHINE WORKS. These works 106 Avenue St. N. Y. (old Aetna Iron Works) have been fitted up at a cost of \$200,000 by Mr. Edison personally for the express purpose of constructing the Steam Dynamo Machines. They will when completed have a capacity of 6 machines per week, that is to say, half of a Central Station. At present they have but about one fourth of this capacity.

These machines are three fold the largest electrical machines in the World. They consist of one 125 horse power steam engine and a dynamo electrical machine both mounted on one bed plate and geared to a common shaft, so that there is no loss by belting. No belts will therefore be used in the Edison system.

The engines are built by Porter, Southwark Iron Works, Phila. and are what are known as High Speed Engines making 350 revolutions per minute. The whole machine occupies a space of about 10 feet square and weighs upward of 20 tons.

One of these machines has been shipped to Paris for exhibition at the Electrical Exposition and will probably be used for lighting the Grand Opera House which has been requested of Mr. Edison by the Government. Another is now receiving the final finish for shipment to London where the writer takes it with a full outfit of all the features of the system for the purpose of establishing the system in England.

The experimental trial of these huge machines has demonstrated that there practical working is no longer problematical. Those for the New York district are now being rapidly pushed to completion and will be ready by the time the structure is ready to receive them.

#### The Underground Conductors.

The manufacture of these "Tubes" is being prosecuted rapidly at the shops of the Edison Tube Works 65 Washington St. N. Y.



They will be ready in ample time and will be laid at the rate of one mile per day. The work of laying them will shortly begin. These conductors consist of two half round copper rods kept apart by insulating washers, the whole then slipped into a wrought iron pipe and the interstices filled with an insulating compound of Mr. Edison's invention in liquid form which afterwards congealing leaves the whole a solid mass capable of being bent and twisted without injury to the copper or the insulation.

#### Meters.

The work of manufacturing the meters though not in so forward a state as that of the other branches is still progressing satisfactorily. They will be ready ere the station is in operation.

#### Fixtures.

These are being made of every conceivable style and pattern both electrical in their entirety and partially electrical and partially gas. Also innumerable forms of attachments wherewith to affix the lamps to existing gas fixtures so as to obviate the expense to the consumer of new fixtures. Messrs Bergmann & Co. 108 Wooster St. N. Y. have the exclusive manufacture of appliances for this department and they have a large establishment employing 100 skilled mechanics and have already a large stock of goods on hand to meet the demand which will be created by the opening of the district station.

#### Lamps

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The Edison Electric Lamp Co. at Menlo Park, N. J., and at East Newark, N. J., have been in operation for over a year and have in stock many times more lamps than will be required by the first district. The NEW factory at East Newark is being fitted up to give it a capacity of 50,000 lamps per day.

#### Wire Running.

The running of the wires from the Meter to each and every burner or lamp to be used by the 1100 subscribers of the 1st. district being a matter requiring a considerable amount of time the work was begun some four months since and being prosecuted by a gang of 100 wire-men under competent supervision is now practically complete.

Thus it is seen that all branches of this gigantic undertaking are rapidly approaching completion. The Central Station plant the Street Conductors, the House Appliances and the lamps are one and all practically receiving their final touches and the long siege of experimental work by which they have been evolved from the chaos found by Mr. Edison is at an end. Every detail has now successfully run the gamut of actual trial and success final and overwhelming is as certain as to-morrow's sun. True there may be some minor hitches incidental to the first starting of so vast a plant, but as every single component of that plant has been tested thoroughly with special reference to the work it is ultimately destined to do there can be no serious failures or even delays.

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The public is to day in ignorance of the facts above given and is therefore not aware of the real value of the Edison Electric Light Stock. The awakening will come ere another 60 or 60 days have passed. The time to buy is the present.

Mr. Edison has shown his own confidence by the investment of every dollar of his capital and his current revenue derived from other sources in his various works. He has over \$100,000 cash in the Lamp Manufacturing Co. and \$200,000 cash in the Machine Works besides smaller amounts in the Tube Works and other enterprises connected with the enterprise.

The cost of the installation of the district in New York is borne by The Edison Electric Illuminating Co. of New York a local organization having no connection with the Edison Electric Light Co., the parent company, except that the chief individual stockholders in the two companies are the same. The Edison Electric Light Co. of New York, the parent Co., is the owner of all the patents for the U.S. and Canada. Its function is to develop the apparatus and then simply to license local organizations throughout the country to use the same. Its output has all been made-henceforth its only expenditures will be such as are involved in defending its patents and maintaining its existence. Its capital stock consists of 4800 shares \$100 each \$480,000. This is the total present capitalization of an electric lighting system and is now a formidable rival to the \$30,000,000 invested in Gas. The stock is

now selling at \$1000 per share, that is 4000 shares-\$4,800,000.

Estimated Valuation.

The basis upon which we now have applications for all the cities in the U.S. and Canada where Gas is used is 25 per cent royalty- assuming that the Gas investment is \$300,000,000, this would make the Edison stock worth \$15,625 per share. Now as there is probably not a single gas plant in the country but which would promptly pay 10 per cent to enable it to control the system to prevent competition or to secure the profits to themselves we will assume that a royalty of only 10 per cent of the gas investment is obtained. This makes the Edison Stock worth \$6,250 per share.

But this is not the only field. The Isolated business, Harbors, Factories, Railroads &c &c. will prove an immense source of revenue.

But aside from all these plain deductions there is this important one for us to recognize in view of the express purpose of this paper, viz, to consider the Edison Stock merely as a speculative one for the ensuing 3 or 4 months.

I have shown how Mr. Edison first excited the hopes and the cupidity of the public by a mere assertion of what he proposed to do. Now I show what he has done toward their realization, and that the public are in the dark as to the nearness of the final issue as well as of its completeness. The question is what will be the effect upon his stock when the newspapers announce the successful opening up of the New York district with its thousands of lights

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me to stay

If it rose as it did to \$3000 per share on his promise what will it go to on him the fulfillment of that promise? This work will rank with the creation of the Telegraph, the Steam Engine, or the Printing Press, and would have taken the same number of years to perfect it but for the colossal brain, untiring energy and vast resources of the greatest inventor of this or any other age. To day the Edison Electric Light is popularly believed to be a failure to-morrow its success will be recognized the World over.

Edward M. Johnson

New York, June 13, 1881.

THE EDISON ELECTRIC LIGHT CO.,  
65 FIFTH AVENUE.

NEW YORK, Oct. 1st, 1881.

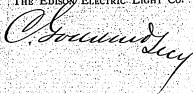
Dear Sir:

We beg to request that, hereafter, you will execute no orders for account of this Company either for labor or material, except upon requisition bearing the written approval of the Vice President or Secretary. From and after this date, no bills will be paid except for work done or material furnished in pursuance of such requisitions.

All deliveries of goods must be accompanied by invoices *in duplicate* with the requisition attached thereto, except where deliveries are in instalments, in which case duplicate invoices of each delivery must be sent with the goods, with a memorandum thereon of the number of the requisition and the Department of the Company from which it emanates, the requisition being attached to the invoice sent with the delivery which completes the order.

Very respectfully,

THE EDISON ELECTRIC LIGHT CO.

A handwritten signature in dark ink, appearing to read "C. Goulding", is written over the typed name of the company.

The Edison Electric Light Company,  
65 Fifth Avenue,

Her'n' Green, Pres.  
S. B. East, Vice-Pres.  
E. P. Fahs, Treas.  
C. Goddard, Sec'y.

New York, October 6 188 1

Thomas A Edison Esq<sup>r</sup>  
65. 5 av

Dear Sir

Strict directions have  
been given, that hereafter, no orders shall be  
executed for account of this Company, either  
for labor or material except upon requisitions  
bearing the written approval of the Vice  
President or Secretary

You will therefore  
please present all requisitions to the Secretary  
daily, as far as possible before 12 o'clock, noon,  
accompanied by a memorandum thereof, on  
form supplied for that purpose, to be filed in  
the Secretary's Office

Yours Truly

C. Goddard Sec'y

File off  
Am.

Know all men by these Presents,  
That I, Charles Batchelor, of New  
York in the State of New Jersey, do  
hereby appoint Sherbourne B. Eaton  
and Thomas A. Edison, or either  
of them, my attorneys or attorney,  
for me and in my name and stead,  
to vote as my proxy at any regular  
or adjourned special or general  
meeting of the stockholders of the  
Edison Electric Light Co., from and  
during the current year 1881,  
upon all matters which may  
come before said meetings, ac-  
cording to the number of  
votes I should be entitled to  
cast if personally present.  
Witness my hand and seal,  
at Paris in the Republic of



of France, the 17<sup>th</sup> day of  
October, in the year 1881,  
signed, sealed & Charles Bataillon

delivered in presence of  
Georg Matheson  
Minister of Finance  
Consulate General of the

United States of America;

Paris France, October 17, 1881;

That said Charles Bataillon,  
who is personally known to me,  
known to me as the person named  
in and to be has executed the above  
going instrument, we know and  
believe he had executed the  
same for the uses & purposes  
therein expressed;

Witness my hand & official

seal, this day of October in the

Georg Matheson  
Consul General

Know all men by these Presents:  
That I Edward B. Bickel, of the State of New Jersey,  
do hereby appoint Charles B. Bickel,  
Eaton and Thomas A. Edwards,  
or either of them, my attorneys  
attorney, for me and in my  
name to attend, to vote, as my  
proxy, at any regular or adjourned  
special or general meeting of the  
stockholders of the Edison  
Electric Light Co. for and during  
the current year 1881, upon all  
matters which may come before  
said meetings, according to the  
number of votes I should be  
entitled to cast if personally  
present. Witness my hand and  
seal at New York the 10th day of June

American Legation  
Consul of New York  
C. E. E.

This 14<sup>th</sup> day of October 1881.

Signed and sealed Rosanna Butcher

Believed in presence of

George Warden

Notary Public

Consulate General of the

United States of America

Paris, France, October 17, 1881

Then appeared ~~Rosanna~~ Butcher,

who is personally known to me,

known to me to be the person named

in and who has executed the com-

ing instrument, acknowledged to

me that she had executed the

same for the use of her own firm

mentioned. Witness my hand

affixed and the day signed

above written.

George Warden

Consul General



Office of WOERISHOPFER & CO.

(Not 54 Exchange Place,

P. O. Box 3105

New York,

188

Replied to Mr. J. C. Reiff

American Light

Oct 20 188

My dear Sir,

Mr. Woerishopper  
has given his proxy atty  
to vote at Electric Light  
meeting to Eaton &  
Goddard which I  
presume is satisfactory  
to you.

If not I will have  
it changed.

Let me know at once  
if O.K.

Yrs  
J. C. Reiff

THE EDISON ELECTRIC LIGHT CO.,  
35 FIFTH AVENUE.

*Oct. 20. 81.*

New York, *October 20. 1881*

Dear Sir:

*A*

meeting

of the Board of Directors of the Edison Electric Light Co., will

be held at the office of *Messrs Morgan & Co*

on *Monday* the *21<sup>st</sup>* day of *October*

1881 at *3* o'clock *P.M.*

By order

*C. Goddard*

*J.*

Secretary.

*Annual reports will be prepared  
for stockholders meeting to be held  
on the 25<sup>th</sup> and will be presented  
for the approval of the board.*

THE EDISON ELECTRIC LIGHT CO.,  
6 FIFTH AVENUE

New York, Oct. 25th, 188

Thomas A. Edison, Esq.

Dear Sir:--

I take pleasure in notifying  
you of your election as Trustee of this Company at the  
annual meeting of stockholders held this day.

The Board will meet for organization and such other  
business as may come before it on Thursday 27th inst. at  
3.15 P.M. at the office of Messrs Drexel, Morgan & Co.

Very truly yours

*Edward*  
Secretary.

New York, October 29 188

Dear Sir

There was no quorum on Thursday  
so the new board could not organize

The meeting on Monday will last  
only a few moments and is called merely  
for the purpose of electing Officers and an  
Executive Committee

Inasmuch as five members  
of the Board are away, it is important that  
every member now in the city should attend  
on Monday

Very Respectfully  
C. Goddard  
D. Secy

*M. Edison*

A conference of Messrs Edison, Goddard, Clarke, Moore  
and myself is hereby announced the same to take place in my room  
tomorrow, Thursday, morning at eleven o'clock to discuss the sub-  
ject of current expenses and to consider whether any deduction  
or saving can anywhere be made. Particular attention will be  
given to the subject of employees with a view of reducing their  
number and salaries if possible.

S. B. Eaton

per Hc. G

November 9th. 1891.

*Edison*  
*105-9-81*  
*copy*

Increase the present capital  
from \$480,000 to \$600,000. Let each stockholder have his in-  
crease at par. To yourself the company will give you all the time  
you may desire within which to make your payments on your share  
of the increase. They suggest that you leave your share of the  
increase in the treasury of the company to be withdrawn by you  
either in whole or in part at any time you please upon paying for  
the same at par with six per cent interest. If you should not  
withdraw the same before the company shall make the cash pay-  
ment to you pursuant to their contract with you of January last  
the amount owing by you shall be deducted from such payment.



THE EDISON ELECTRIC LIGHT CO.,  
65 FIFTH AVENUE.

New York, Nov 16 1881

Dear Sir:

A meeting  
of the Board of Directors of the Edison Electric Light Co., will  
be held at the office of J. P. Morgan & Co  
on Friday the 18 day of Nov  
1881 at 12 o'clock M.

By order

G. J. Gould  
Secretary.

The proposition for increase  
of Capital Stock, heretofore  
discussed, will be finally acted  
upon -

THE EDISON ELECTRIC LIGHT CO.,  
65 FIFTH AVENUE.

New York, Nov 18 1881

Dear Sir:

An adjourned meeting  
of the Board of Directors of the Edison Electric Light Co., will  
be held at the office of J. P. Morgan & Co  
on Monday the 21<sup>st</sup> day of November  
1881 at 12 o'clock M.

By order

G. J. Gould  
Secretary.

The proposition for increase of  
Capital Stock, heretofore discussed,  
will be finally acted upon -

School of Mines, Columbia College,

CORNER 40TH STREET & 4TH AVENUE,

New York, N.Y. 30<sup>th</sup> 1881.

Edison Electric Light Co.,  
Gentlemen.

One of my friends  
a gentleman from Montreal who  
is very much interested in the  
progress of electricity, and who controls  
one of the largest industries in  
Montreal, is anxious to look into  
your method of electric lighting  
and to go through your factory.

His name is Allpatte, and if you  
are willing that he should see your  
arrangements, if you will be good  
enough to send him a permit to  
my care, I shall be greatly obliged  
to you.

J. A. Edison

Yours Truly,  
Wm. C. Brown

[illegible][illegible]

THE EDISON ELECTRIC LIGHT CO.,  
45 FIFTH AVENUE.

New York, *Decem 8<sup>th</sup>* 188*8*

Dear Sir:

*A special* meeting  
of the Board of Directors of the Edison Electric Light Co., will  
be held at the office of *Mrs. Drexel Morgan & Co.*  
on *Friday* the *9<sup>th</sup>* day of *Decem*

188*8* at *12* o'clock *A. M.* for the purpose of taking  
action upon a financial plan proposed at  
the last meeting -

By order

*C. F. Woodward*  
Secretary.

**1881. Electric Light - Edison Electric Light Company of Europe, Ltd. - General (D-81-027)**

This folder contains correspondence, agreements, lists of stockholders, and other documents relating to the business of the Edison Electric Light Company of Europe, Ltd. Related material can be found in D-81-032 (Electric Light - Foreign - Europe) and D-81-035 (Exhibitions - Paris Electrical Exhibition).

Approximately 90 percent of the documents have been filmed. The following categories of documents have not been filmed: routine notices for meetings of the board of directors; duplicate copies of selected documents.

Feb. 1882

OFFICE OF THE  
EDISON ELECTRIC LIGHT CO.  
65 5th AVE.  
NEW YORK

146  
To see Edison at once tell him  
arranging Exposition and Royal grand  
scale Batchelor goes Paris to advise  
detail money for machine cable rest  
week from Paris prevent anybody  
getting control till Edison will  
get him ten times more from Europe  
when Exhibition made than anybody  
else states they will give. Answer  
at once Can provide Edison personally  
with moderate amount money if  
he keeps control of Edison European  
light Co. so as to allow offers during  
Exhibition

46.

European  
Right  
~~before~~  
Blackish

Copy Call  
From Peckas

About and  
February

Specimen of the  
Fruit of the  
Tree of Life  
from the  
Island of  
Hawaii

Thomas Alva Edison

- To -

The Edison Electric Light  
Company of Europe, Limited

Assignment

Letters Patent of Italy

Dated March 1, 1881

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*Original*

Whereas I, Thomas Alva Edison, of Menlo Park in the State of New Jersey, United States of America, have obtained letters patent of the Kingdom of Italy for inventions in or relating to the development of electric currents and the application of electricity to the uses of lighting, power or heating, being the letters patent, and for the inventions, more particularly hereinafter described.

And whereas The Edison Electric Light Company of Europe, Limited, a corporation created and existing under the laws of the State of New York, and organized under the law of that State entitled "An Act to provide for the organization and regulation of certain business corporations," passed June 21, 1875, and having its principal place of business in the City of New York in the State of New York, and hereinafter called the Company, is desirous of acquiring all my right, title and interest in said letters patent and in the inventions covered thereby, and the exclusive use and benefit of said letters patent and inventions in and for the Kingdom of Italy, and I have agreed to sell, assign and convey all my said right, title and interest to said Company.

Now this Indenture witnesseth that in consideration of one thousand francs to me paid by said Company before the sealing and delivery hereof and receipt of which is hereby acknowledged, I the said Thomas



Nixon, Edison, have sold, assigned and set over, and by these presents do sell, assign and set over to the said corporation, The Edison Electric Light Company of Europe, Limited, the letters patent of the Kingdom of Italy more particularly hereinafter described, and all my right, title and interest of every nature therein, and all my right, title and interest of every nature in and for the Kingdom of Italy, in all the inventions and improvements covered and secured by said letters patent, to wit: —

- (1) Letters patent of Italy, dated November 21<sup>st</sup> 1878, and marked 4,551, Registo Generale, Vol. 13, N<sup>o</sup> 10,456 for Method of and means for developing Electric Currents and lighting by electricity; also
- (2) Letters patent of Italy, dated June 23<sup>rd</sup> 1879, and marked 4,589, Registo Generale, Vol. 14, N<sup>o</sup> 10,995, for Improvement in the production of electricity in the Electric Light &c. Also (3) Letters patent of Italy, dated December 6<sup>th</sup> 1879 and marked 4,797, Registo Generale, Vol. 14, N<sup>o</sup> 11,393, for Improvement in Electric Lamps and in the method of manufacturing the same; also (4) Letters patent of Italy, dated December 31, 1879, and marked 4,835, Registo Generale Vol. 14, N<sup>o</sup> 11,492 for Improvement in the production of Electricity in the Electric Light, &c. also (5) Letters Patent of Italy, dated April 28<sup>th</sup> 1880, marked 4,959, Registo Generale, Vol. 14, N<sup>o</sup> 11,787, for Improvement in Electric Lamps, and in the method of manufacturing the same; also
- (6) Letters patent of Italy, dated May 10<sup>th</sup> 1880



marked 4986, *Registre Generale*, Vol. 14. N<sup>o</sup> 11,809, for Improvement in utilization of electricity for light, heat and power &c; also (7) Letters patent of Italy, dated October 12<sup>th</sup> 1880, marked 5,137, *Registre Generale*, Vol. 15. N<sup>o</sup> 12,251, for Improvement in Dynamo or Magneto Electric Machines and Electric Motors; also (8) Letters patent of Italy, dated November 6. 1880, marked 5,169, *Registre Generale*, Vol. 15. N<sup>o</sup> 12,345 for Improvement in Electric Lamps and in Carbons or Incandescent Conductors therefor and in means for and methods of manufacturing the same; also (9) Letters patent of Italy, dated November 19<sup>th</sup>, 1880, marked 5,183 *Registre Generale*, Vol. 15. N<sup>o</sup> 12,339, for Improvement in systems of conductors for the distribution of electricity as a lighting and motive power agent, and in appliances connected therewith; also (10) Letters patent of Italy, dated November 26<sup>th</sup> 1880, marked 5,196, *Registre Generale*, Vol. 15. N<sup>o</sup> 12,366, for Improvements in systems for measuring the amount of electrical current flowing through a circuit &c.

The said Letters patent and all my right, title and interest is sold, assigned and transferred, as aforesaid, to be held and enjoyed by the said *The Edison Electric Light Company of Europe, Limited*, for its own use, and for the use and behoof of its successors and assigns, to the full end of the term for which said Letters patent were granted, and also for

the full term of all and any extensions of any of them, as fully as the same could have been held and enjoyed by me, if this assignment had not been made.

And I, the said Thomas Alva Edison, for myself and my legal representatives, do hereby covenant and agree that I and they will, upon request, make, execute and deliver to the said Company, its successors and assigns, all further instruments and agreements necessary for fully transferring or securing to the said Company its successors and assigns, all the rights, titles and interests hereby sold, assigned and conveyed, or intended or expected to be sold, assigned or conveyed.

In testimony whereof I have hereunto set my hand and seal this first day of March in the year one thousand eight hundred and eighty one.

Signed, sealed and delivered

in the presence of  
Richard E. O'Brien

Thomas Alva Edison



State of New York

City & County of New York

} ss: on this eighteenth day of July A.D. 1881, before me personally came Thomas Alva Edison, to me known and known to me to be the individual described in and who executed the foregoing instrument, and he then acknowledged to me that he executed the same

and for the uses and purposes therein mentioned,  
In testimony whereof I have hereunto set my  
hand and affixed my notarial seal this  
18<sup>th</sup> day of July A.D. 1881

*Richard E. O'Brien*

*Notary Public June 6*  
*(not filed in 1886)*



VISTO AL CONSOLATO GENERALE D'ITALIA IN NUOVA YORK  
 PER LA LEGALIZZAZIONE DELLA QUI SOPRA SCRITTA FIRMA DEL  
 SIGNOR *Richard E. O'Brien* notary pub  
 lica della Contad. things in questo Stato...  
 NUOVA YORK, 19. Luglio 1881

Diritto Lire 40  
 Art. 83. della Tariffa  
 Perc. No. 1526



IL R. CONSOLE GENERALE  
*R. Vicomte*  
*MM*



MINISTERO DEGLI AFFARI ESTERI  
 VISTO PER LEGALIZZAZIONE DI FIRMA  
 DEL SIG. *Richard E. O'Brien*  
 Not. P. *Long* in N. York  
 Roma add. 4. Agosto 1881  
 GLI INCARICATO

*R. Long*

*Nota quanta il Capitano di Vorno per le dieci*  
*regole demandate il Vicepresimonto del*  
*la Vignatura l'adunata in quante, presento*  
*oggi dopo del 4. Agosto uniformemente*  
*alla Moduzione girata il presente*  
*atto.*

*Vorno il 4. Agosto 1881*

*Il Capitano di Vorno*  
*Chiaro*



4. Revolving Drum

Thomas Alva Edison.  
—  
The Edison Electric Light  
Company of Europe, Limited.

Assignment  
Letter Patent of France

Dated March 1, 1881

May 10, 1881  
Not to be paid  
over on account  
of Taxes. There are none  
to be paid up.

710  
127.241  
136.910  
133.756  
130.910  
136.688  
136.399  
138.941

Whereas I Thomas Alva Edison, of Men-  
lo Park in the State of New Jersey, United States  
of America, have obtained Letter Patent of the  
Republic of France for inventions in or relating  
to the development of electric currents, and the  
application of electricity to the uses of lighting, power  
or heating, being the Letter Patent; and for the in-  
ventions, more particularly hereinafter described,

And whereas The Edison Electric Light Com-  
pany of Europe, Limited, a corporation created  
and existing under the laws of the State of New  
York, and organized under the Law of that State  
entitled "An Act to provide for the organization  
and regulation of certain business corporations",  
passed June 21, 1876, and having its principal  
place of business in the City of New York in the  
State of New York, and hereinafter called the  
Company, is desirous of acquiring all my right,  
title and interest in said Letter Patent and  
in the inventions covered thereby, and the  
exclusive use and benefit of said Letter Pat-  
ent and inventions in and for the Republic  
of France, and I have agreed to sell, as-  
sign and convey all my said right,  
title and interest to said Company.

Now this Indenture witnesseth  
that in consideration of one dollar and  
other valuable considerations now paid by  
said Company, before the sealing and delivery

herof, and receipt of which is hereby acknowledged,  
I, the said Thomas Alva Edison, have sold, as-  
signed and set over, and, by these present do sell,  
assign and set over to the said corporation, the  
Edison Electric Light Company of Europe Limited,  
the letters patent of the Republic of France, more  
particularly hereinafter described, and all my  
right, title and interest of every nature therein,  
and all my right, title and interest of every  
nature in and for the Republic of France in  
all the inventions and improvements covered  
and secured by said letters patent, to wit: (1.)  
Letters patent of France numbered 127,341,  
dated February 4<sup>th</sup> 1879, for Method of and means  
for developing Electric Currents and Lighting by  
Electricity; also (2.) Letters patent of France  
numbered 130,910, dated August 25<sup>th</sup> 1879, for  
Improvements in the production of Electricity in  
the Electric Light &c; also (3.) Letters patent of  
France, numbered 133,756, dated January 20<sup>th</sup>  
1880, for Improvement in Electric Lamps and in  
the Method of manufacturing the same; also  
(4.) Letters patent of France, numbered 130,910, dated  
February 25<sup>th</sup> 1880, for Improvement in the production  
of electricity in the Electric Light &c; also (5.)  
Letters patent of France, numbered 136,088, dated  
June 16<sup>th</sup> 1880, for Improvement in Electric Lamps  
and in the method of manufacturing the same;  
also (6.) Letters patent of France, numbered  
136,397, dated July 5<sup>th</sup> 1880, for Improvement  
in the utilization of Electricity for light,

heat and power &c; also (2) Letters patent of France, numbered 138,941, dated November 27<sup>th</sup> 1880, for Improvement in Dynamos or Magneto-Electric Machines and Electric Motors.

The said Letter patent and all my rights, title and interest, as sold, assigned and transferred as aforesaid, to be held and enjoyed by the said The Edison Electric Light Company of Europe, Limited, for its own use and behoof, and for the use and behoof of its successors and assigns, to the full end of the term for which said letters patent were granted, and also for the full term of all and any extensions of any of them, as fully as the same could have been held and enjoyed by me if this assignment had not been made.

And I, the said Thomas Alva Edison, for myself and my legal representatives, do hereby covenant and agree that I and they will, upon request, make, execute and deliver to the said Company, its successors and assigns, all further instruments and agreements necessary for fully transferring or securing to the said Company, its successors and assigns, all the rights, title and interests hereby sold, assigned and conveyed, or intended or agreed to be sold, assigned or conveyed.

In testimony whereof I have hereunto set my hand and seal this first day of March in the year one thousand

and eight hundred and eighty one  
Signed, sealed and delivered  
in the presence of } Thomas A. Edison  
Richard E. O'Brien

State of New York  
City and County of New York }  
On this fifth day  
of March A.D. 1881, before me personally came Thomas  
Alva Edison, to me known and known to me to be the  
individual described in and who executed the foregoing  
instrument, and he then acknowledged to me that he  
executed the same and for the uses and purposes therein  
mentioned.

In testimony whereof I have hereunto set my hand  
and affixed my notarial seal this fifth day  
of March A.D. 1881

Richard E. O'Brien

Notary Public, Kings Co.

(not filed in N.Y.C.)

Monsieur le Général de France à New York  
Pour légalisation de la signature ci-dessus de  
Richard E. O'Brien, Notaire Public à New York.  
New York le 16 Avril 1881

L. Bonard Général-empêché  
Se. Chancelier

Notary  
QUITTING 1881  
16 April  
TAXES 1881  
PERCU 1881





1 1765 81 11  
Thomas Alva Edison

The Edison Electric Light  
Company of Europe Limited

Assignment

Letter Patent of Denmark

Dated March 1<sup>st</sup> 1885

Whereas I Thomas Alva Edison, of  
Menlo Park in the State of New Jersey, United  
States of America, have obtained Letter patent  
of the Kingdom of Denmark for inventions in  
or relating to the development of electric cur-  
rents and the application of electricity to the  
uses of lighting, power or heating, being the let-  
ter patent and for the inventions, more particu-  
larly hereinafter described.

And whereas The Edison Electric Light Com-  
pany of Europe, Limited, a corporation created  
and existing under the laws of the State of New  
York, and organized under the Law of that State  
entitled "An Act to provide for the organization  
and regulation of certain business corporations",  
passed June 21, 1875, and having its principal  
place of business in the City of New York in the  
State of New York, and hereinafter called the  
Company, is desirous of acquiring all my right,  
title and interest in said Letter Patent and  
in the inventions covered thereby and the  
exclusive use and benefit of said Letter Pa-  
tent and inventions in and for the Kingdom  
of Denmark, and I have agreed to sell, as-  
sign and convey all my said right, title  
and interest to said Company.

Now this Indenture witnesseth  
that in consideration of one dollar and  
other valuable considerations to me paid by

said Company, before the sealing and delivery hereof, and receipt of which is hereby acknowledged, I, the said Thomas Alva Edison, have sold, assigned and set over, and by these presents do sell, assign and set over to the said corporation The Edison Electric Light Company of Europe, Limited, the letters patent of the Kingdom of Denmark more particularly hereinafter described, and all my right, title and interest of every nature therein, and all my right, title and interest of every nature in and for the Kingdom of Denmark in all the inventions and improvements covered and secured by said letters patent, to wit:—

(1) Letters patent of Denmark, dated May 8<sup>th</sup> 1879, marked K. K. 1879 N<sup>o</sup> 2269 for method of and means for developing Electric currents and lighting by electricity; also (2) Letters patent of Denmark, dated June 11<sup>th</sup> 1880, marked K. K. 1879 N<sup>o</sup> 1216 for Improvement in Electric Lights, also (3) Letters patent of Denmark, dated February 27<sup>th</sup> 1880, marked K. K. 1879 N<sup>o</sup> 2333 for Improvement in Electric Lamps and in the method of manufacturing the same, also (4) Letters patent of Denmark, dated May 15<sup>th</sup> 1880, marked K. K. 1880 N<sup>o</sup> 14 for Improvement in Electric Lamps, and in the method of manufacturing the same, also (5) Letters patent of Denmark, dated June 11<sup>th</sup> 1880, and marked K. K. 1879 N<sup>o</sup> 1316 (the Specification therewith being marked ad B. N<sup>o</sup> 369-1880 and 188-80) for magnetic electric machines.

The said letters patent and all my right, title and interest so sold, assigned and transferred as aforesaid, to be held and enjoyed by the said The Edison Electric Light Company of Europe, Limited, for its own use and for the use and behoof of its successors and assigns, to the full end of the term for which said letters patent were granted, and also for the full term of all and any extensions of any of them, as fully as the same could have been held and enjoyed by me, if this assignment had not been made.

And I, the said Thomas Alva Edison, for myself and my legal representatives, do hereby covenant and agree that I and they will, upon request, make, execute and deliver to the said company, its successors and assigns, all further instruments and agreements necessary for fully transferring or securing to the said company, its successors and assigns, all the rights, titles and interests hereby sold, assigned and conveyed, or intended or agreed to be sold, assigned or conveyed.

In testimony whereof I have hereunto set my hand and seal this first day of March in the year one thousand eight hundred and eighty one.

Signed, sealed and delivered

in the presence of  
Richard C. Brier

Thomas Alva Edison

State of New York

City & County of New York

On this fifth day of March  
A.D. 1897 before me personally came Thomas Alva Edison,  
to me known and known to me to be the individual described  
in and who executed the foregoing instrument, and he then  
acknowledged to me that he executed the same and for the  
uses and purposes therein mentioned.

In testimony whereof I have hereunto set my hand and  
affixed my notarial seal this fifth day of March  
A.D. 1897.

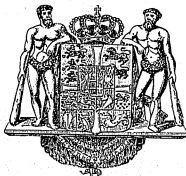
Richard E. O'Brien

Notary Public, Kings Co.

(Not filed in N.Y. Co.)

United States of America.

DANISH



CONSULATE.

NEW-YORK.

I, H. W. Bræm The Danish Majesty's Consul for the States of New York, Connecticut and places in New Jersey, hereby Certify, that Nelard C. P. Olsen whose name is affixed to the aforesaid document, is a duly authorized Notary Public, Chicago C. Rogers & Co. and that to his signature full faith ought to be given.

In Testimony Whereof, I have hereunto subscribed my name and affixed my Seal of Office, this 10 day of April 1881.

H. W. Bræm

Secretary

Kjøbenhavn, den 14. juli 1881.

5079.

[ATTACHMENT]

L  
 befrakt Skinnaff af 28<sup>de</sup> J. M. J. G. S. S.  
 for Ministerial, ansett, af Thomas Mads Edition  
 af Skindt Værk i Næsten 1000 Bind i det fornunder  
 Næsten i det fornunder af det "The Edition Electric Light  
 Company of Europe Limited" for overdraget for  
 1880 J. G. S. S. af 11. Juni 1880, 27. Februar 1880, 13. Mai  
 1880 J. G. S. S. af 11. Juni 1880 forunder, drevet foruunder  
 indvundet elektrisk Patents, foruunder foruunder  
 det foruunder foruunder foruunder foruunder  
 foruunder an foruunder af Ministerial  
 foruunder foruunder foruunder foruunder

1. I Rådhusning Grevsk. Skatte maa til den  
Sagelys Skatteindtægt, som den maa, at den maa  
vil vil Grevsk. for, at den maa den maa den  
Rådhusning for, at den maa den maa den  
Grevsk. for den maa den maa den maa den  
den den den i den maa den maa den maa den  
officiel Rådhusning den maa den maa den  
Rådhusning for den maa den maa den maa den  
Landskatterne

Sir  
 Dr. Richard. Horne P. Master  
 Patent and Designs Registration Office  
 33 Chancery Lane

London W.C.

See B. G. Allen of Aug. 12, 1881-

John K. Porter.  
Organizer Electric  
Gas Water Supply  
Coast Pacific  
Co. S. H. H. H.  
Vancouver B.C.

P.O. Box 1836.

*Porter, Lowrey, Loren & Stone*  
*Attorneys & Counsellors at Law*  
*No. 3 Broad St. New York.*

March 3rd 1891.

18

Dear Mr. Edison:—

This letter relates to business strictly of the Electric Light Company of Europe, but I write it to you, because I think in that way it will secure attention.

I have had in hand, some time, assignments to be made by you to the Light Company of Europe, and among them I come to the patents of France. Mr. Serrell tells me that no assignment can be validly made until after all the taxes due on the patents have been paid. There are eight patents to be paid for, and the amount is Twenty-four hundred Dollars. Mr. Serrell says to-day in a letter to me, "there is no way of avoiding the "payment of these taxes, previous to making the transfer."

Mr. Fabbri spoke to me the other day about some proposition that was pending for a purchase by him of a certain interest in your European Company's stock. I told him that the stock was good for nothing at present, for the simple reason that the Company had no capital. I suppose if you wish to carry out any such plan with Mr. Fabbri, or do anything else with the Euro-

pean Company, that you will desire to have the assignments made and the interests of Buskas, Bailey and Busker turned in. If the Company wishes these things done, I would like to be instructed in writing.

We should be pleased if any attention whatever were paid to our bills for services rendered to this company several months ago.

Respect'y,

*John K. Porter*  
*J. K. Porter*

Thomas H. Edison, Sher-  
wood Parker, Joshua S.  
Baker, and James H. Barker  
— with —  
The Edison Electric Light  
Company of Canada Limited

Agreement

Dated April 1, 1887.

(Copy)



THIS INDENTURE made the first day of April in the year one thousand eight hundred and eighty one, by and between THOMAS A. EDISON, of Menlo Park in the State of New Jersey, THEODORE PUSKAS and JOSHUA F. BAILEY, both now or late of 45 Avenue de l'Opera, Paris, France, and JAMES H. BANKER, of the City of New York, parties of the first part, and THE EDISON ELECTRIC LIGHT COMPANY OF EUROPE, LIMITED, a corporation organized under the laws of the State of New York and having its principal place of business in the City of New York, party of the second part, \_\_\_\_\_

WITNESSETH: \_\_\_\_\_

FIRST: \_\_\_\_\_ WHEREAS by an agreement made May 2nd 1879, by and between the said Edison, Puskas and Bailey, parties of the first part thereto, and the said Banker, of the City of New York, party of the second part thereto, - to which instrument reference is hereby made for particulars and certainty - it was recited and declared that said parties of the first part collectively owned or were entitled to acquire and control the exclusive use in Belgium, Austria, France, Denmark, Germany, Russia, Italy and Spain, of certain then existing and future inventions of Edison in or relating to the development of electric currents and the application of electricity to, the uses of lighting, power and heating; and then owned or might thereafter acquire other letters patent of said Countries or some of them for said inventions, in the proportion of thirty undivided sixtieths in Edison, twenty seven undivided sixtieths in Puskas and three undivided sixtieths in Bailey. \_\_\_\_\_

SECOND:            AND WHEREAS in virtue of provisions of said agreement the said Bunker has heretofore become entitled to the interest therein provided to be sold, assigned and secured to him by the other parties, so that the respective undivided interests of the four parties of the first part hereto in the inventions and Patents above referred to are now as follows:    Edison, thirty; Puskas, seventeen; Banker, ten; and Bailey, three.

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THIRD:            AND WHEREAS it was further provided by said agreement that upon such re-apportionment and vesting of interests in the respective proportions last named, the said several parties should form such corporation under the laws of the State of New York as is therein provided and should sell, assign and convey to it their said respective interests in the said inventions and patents as they should stand after such assignment to Banker as is therein provided.

---

FOURTH:            AND; WHEREAS no severance or assignment of said proportionate interests in such Letters Patent or inventions other than that made by said agreement has been made either by or between said Edison, Puskas and Bailey, or by said parties to said Banker; but all said parties hereby declare and agree that their interests are the several proportions last above recited, and whereas all letters patent covered by said agreements hitherto granted have been issued in the name of and to the said Edison, and he has executed or is about to execute assignments of the whole

and undivided right, title and interest in all such letters patent to the proposed corporation direct, with the concurrence and approval of the said Puskas, Ranker and Bailey.

---

FIFTH:            AND WHEREAS such corporation has been formed by the name of The Edison Electric Light Company of Europe, Limited, hereinafter designated the Company.

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SIXTH:            NOW: for the purpose of executing the said agreement of May 2nd. 1879, in consideration of the premises and of one dollar and other valuable considerations to each of us paid by each of the other parties to this instrument and receipt whereof hereby by all of said parties is acknowledged, We, the said Thomas A. Edison, Theodore Puskas, James H. Ranker and Joshua F. Bailey, do hereby jointly and severally sell, grant, assign and convey to "The Edison Electric Light Company of Europe, Limited"

(1) Our respective undivided interests aforesaid, to wit: Edison, thirty sixtieths ( $\frac{30}{60}$ ); Puskas, seventeen sixtieths ( $\frac{17}{60}$ ); Ranker, ten sixtieths ( $\frac{10}{60}$ ); and Bailey, three sixtieths ( $\frac{3}{60}$ ); and all the right, title, interest and benefit of us and each of us in and to all existing inventions of said Edison in or relating to means for the development of electric currents and the application of electricity to, the uses of lighting, power and heating in and for the following countries of Europe, to wit: Belgium, Austria, France, Denmark, Germany, Russia, Italy and Spain; and in, to and under all letters patent of all or any of said countries which may have been already or may hereafter be granted, and

especially all such letters patent as are referred to in the Schedule A, hereto annexed and hereby made part hereof; (2) And also in and to all future inventions of Edison of the character above described which he may make within five years from said May 2nd. 1879, in and for the same countries; and in all letters patent of all or any of the same countries which may be granted therefor;

(3) And all use, benefit and enjoyment of every nature of all said inventions and letters patent in and for said countries and each of them and in all additions to or improvements of all and any of the existing and future inventions of the character described in the first article hereof, which we or either of us may hereafter acquire; (4) together with the rights, titles and interests of all and each of us, in all the inventions, letters patent and other property which are the subject of said agreement of May 2nd. 1879; and all claim and demand of every nature of either of us against either of the others under said agreement in respect to such inventions, letters patent and other property last named.

SEVENTH: It is understood and agreed however that nothing in this instrument contained applies to or is intended to apply to any money or other thing whatsoever which either of us, the said Edison, Puskas, Bailey and Banker, has agreed and is now bound to pay or deliver to either of the others us or on account of the price or consideration to be paid for our respective interests in such inventions, letters patent or other property; but such agreements and every of them remain in full force and effect, in no wise affected hereby.

EIGHTH: For the same considerations aforesaid and in consideration especially of one dollar to each of us paid by the said Company, party of the second part hereto, and by the said Edison, We, the said Puskas, Banker and Bailey do hereby respectively ap- prove and ratify the aforesaid assignments by Edison to the Com- pany of the letters patent referred to in Schedule A. and do here- by severally sell, grant, assign and confirm to said Company all the title and interest granted to it by said several assignments, and our respective interests therein; and do severally release and discharge the said Edison from all obligation to sell, grant, as- sign or convey to us or either of us any unaided or other inter- est in said letters patent or either of them, or otherwise than is herein provided.

---

NINTH: For the same considerations aforesaid and in con- sideration of one dollar to me paid by each of the other parties to this instrument and receipt of all which considerations is her- by acknowledged, I, James H. Banker, do hereby release and dis- charge the said Edison, Puskas and Bailey and each of them from all obligation to sell, grant, assign or convey to me the undi- vid- ed interest of ten sixtieths in the inventions and letters patent stipulated in said agreement of May 2nd, 1879 to be secured to me by them.

---

TENTH: For the same considerations aforesaid, I, the said Edison, at the request and with the consent of the other parties hereto, and in further consideration of one dollar to me paid by each of them before the execution and delivery hereof, and receipt of which is hereby acknowledged, do hereby covenant and agree

with said other parties hereto respectively that I will, for the benefit and on account of the Edison Electric Light Company of Europe, Limited, make applications in one form and promptly, from time to time as the inventions are made, for letters patent of all the countries of Europe herein named for all existing or future inventions of the character, and made within the period of five years from May 2nd 1879, or otherwise described in or covered by the agreement of that date or intended so to be; and shall and will from time to time as such letters patent are granted, promptly assign the same to the said Company, and make, furnish, sign and execute in required form and deliver to the Company or to its duly designated attorney for that purpose, all such applications, specifications, drawings, powers of attorney and other writings and all instruments of assignment and conveyance as may be necessary to secure to the Company the full use, enjoyment and benefit of, and the whole right, title and interest in, all such inventions and letters patent aforesaid in and for all said countries of Europe.

---

ELEVENTH: For the same considerations aforesaid and in consideration of one dollar to each of us paid before the execution and delivery hereof, and receipt whereof we severally acknowledge, We, the parties of the first part, do hereby severally covenant and agree with the Company, party of the second part, that we severally will do all such other acts and will make, execute and deliver to said Company all such further or other instruments, as may be necessary for fully securing to it all the rights, titles

and interests hereby assigned and conveyed, or intended so to be, and all our respective several and individual interests in all the inventions and letters patent, present or future, which are the subject of this instrument.

TWELFTH: It is mutually agreed that the agreements and covenants of the several parties hereto shall severally bind and ensure to the benefit respectively of themselves and of the executors, administrators and assigns of the individuals, and of the successors and assigns of the corporation, who are parties hereto.

IN WITNESS WHEREOF the several parties of the first part have hereto set their hands and seals, and the party of the second part has caused its corporate seal to be hereto affixed and its corporate name to be subscribed by the hand of its President the day and year first above written.

Edison Electric Light Co. of Europe (Limited)  
by

(L. S.)

Thos. A. Edison,

President.

Attest W. S. Perry

Thomas Alva Edison. (seal)

Secretary:  
pro tem

Theo. Puskas (seal)  
by E. W. Saportas  
his Atty in fact.

J. F. Bailey. (seal)

James H. Banker. (seal)

State of New York

City & County of New York ss:                      On the fourth day of April  
A.D. 1881, before me personally came Thomas Alva Edison, Joshua  
F. Bailey and James W. Ranker, to me known and known to me to be  
the individuals described in and who executed the foregoing in-  
strument and they then severally acknowledged to me that they ex-  
ecuted the same and for the uses and purposes therein mentioned.

And on the same day before me personally came Edouard W.  
Saportas, known to me to be the attorney in fact of Theodore Puskas  
and known to me to be the individual described in and who as such  
attorney executed the foregoing instrument, and he then acknowledged  
to me that he executed the same as the act and deed of Theodore  
Puskas, therein described, and for the uses and purposes therein  
mentioned, by virtue of a power of attorney duly executed by the  
said Theodore Puskas, bearing date the twenty second day of Oct-  
ober in the year 1880.

In testimony whereof I have hereunto set my hand and  
(L. S.)                      affixed my notarial seal this fifth day of May A.D.  
1881.

Richard E. O'Brien,

Notary Public, Kings Co.

(Cert. filed in N.Y. Co.)



State of New York

City & County of New York ss:

On the fifth day of May A.D.1881, before me personally came Thomas Alva Edison and William S. Perry to me known and known to me to be respectively the persons described in and who executed the foregoing instrument as the President and Secretary pro tempore of The Edison Electric Light Company of Europe, Limited, the corporation described in and in whose behalf the same instrument was by them executed, and they severally acknowledged to me that they executed the same as the free act and deed of said Company for the uses and purposes therein mentioned; and thereupon the said Thomas Alva Edison, being by me duly sworn, said that he resided in Menlo Park in the State of New Jersey; that he was the President of the said The Edison Electric Light Company of Europe, Limited; and that he signed the name of the said The Edison Electric Light Company of Europe Limited, and his own name as President thereof to the foregoing instrument, by order of the Board of Directors of said Company; and the said William S. Perry, being by me duly sworn, said that he resided in the City of New York; that he was Secretary pro tempore of the said The Edison Electric Light Company of Europe, Limited; that he knew the corporate seal of said Company; that the seal affixed to the foregoing instrument was such corporate seal and was thereto affixed by him, by order of the Board of Directors of said Company, and by the like order he signed his own name to said instrument as Secretary pro tempore of said Company.

In Testimony whereof I have hereunto subscribed my name  
and affixed my notarial seal this fifth day of May

A. D. 1881.

(L. S.)

Richard E. O'Brien,

Notary Public, Kings Co.

(cert. filed in N. Y. Co.)

SCHEDULE A.

of Letters Patent referred to in the Sixth Article of the annexed instrument, dated April 1st 1881, being the same Letters Patent which are described in the instrument hereinafter named, as follows, namely:

I. ITALY. All those Letters Patent of the Kingdom of Italy - named in an instrument of sale and assignment made by Thomas Alva Edison to The Edison Electric Light Company of Europe, Limited, dated March 1st 1881, and there described as follows:

(1) Letters Patent of Italy, dated November 21st 1878 and marked 4351. Registro Generale. Vol. 13. No. 10,456, for method of and means for developing electric currents and lighting by electricity.

(2) Letters Patent of Italy dated June 23rd 1879, and marked 4589 Registro Generale Vol. 14. No. 10,995, for improvement in the production of electricity in the electric light &c.

(3) Letters Patent of Italy dated December 6th 1879, and marked 4,797, Registro Generale Vol. 14. No. 11,393 for improvement in electric lamps and in the method of manufacturing the same.

(4) Letters Patent of Italy, dated December 31st 1879 and marked 4,835 Registro Generale Vol. 14. No. 11,492 for improvement in the production of electricity in the electric light &c.

(5) Letters Patent of Italy dated April 28th 1880, and marked 4959 Registro Generale Vol. 14. No. 11,787 for improvement in electric lamps and in the method of manufacturing the same.

(6) Letters Patent of Italy dated May 10th 1880 and marked 4986 Registro Generale Vol. 14. No. 11,809 for improvement in utilisation of electricity for light, heat and power &c.

(7) Letters Patent of Italy dated October 12<sup>th</sup> 1880, and marked 5137 Registro Generale Vol. 15. No. 12,251 for improvement in dynamo or magneto electric machines and electric motors.

(8) Letters Patent of Italy dated November 6<sup>th</sup> 1880 and marked 5169. Registro Generale Vol. 15. No. 12,315 for improvement in electric lamps and in carbons or incandescent conductors therefor and in means for and methods of manufacturing the same.

(9) Letters Patent of Italy dated November 19<sup>th</sup> 1880 and marked 5183 Registro Generale Vol. 15. No. 12,339 for improvement in systems of conductors for the distribution of electricity as a lighting and motive power agent, and in appliances connected therewith.

(10) Letters Patent of Italy dated November 26<sup>th</sup> 1880 and marked 5,196 Registro Generale Vol. 15. No. 12,386 for improvement in systems for measuring the amount of electrical current flowing through a circuit &c.

II. BELGIUM. All those Letters Patent of the Kingdom of Belgium, named in an instrument of sale and assignment made by Thomas Alva Edison to The Edison Electric Light Company of Europe, Limited, dated March 1st 1881, and there described as follows:

(1) Letters Patent of Belgium, dated November 30<sup>th</sup> 1878, numbered 46,567, for method of and means for developing electric currents and lighting by electricity.

(2) Letters Patent of Belgium, dated June 18th 1879, and numbered 48,341, for improvement in the production of electricity in the electric light.

(3) Letters Patent of Belgium, dated November 29, 1879, numbered 49,884, for improvement in Electric Lamps and the method of manufacturing the same.

(4) Letters Patent of Belgium (of addition) dated December 31st 1879, and numbered 50,164, for improvement in the production of electricity in the electric light &c.

(5) Letters Patent of Belgium, dated April 30<sup>th</sup> 1880, and numbered 51,155 for improvement in electric lamps and in the method of manufacturing the same.

(6) Letters Patent of Belgium, dated May 15th 1880, and numbered 51,329 for improvement in utilization of electricity for light, heat and power &c.

(7) Letters Patent of Belgium, dated October 15th 1880 and numbered 52,698 for improvement in dynamo or magneto electric machines and electro motors.

(8) Letters Patent of Belgium, dated November 15th 1880, and numbered 52,890 for improvements in electric lamps and in the carbons or incandescent conductors belonging thereto.

(9) Letters Patent of Belgium dated November 30th 1880 and numbered 53,018, for improvements in systems of conductors for the distribution of electricity as a lighting and motive power agent and appliances connected therewith.

(10) Letters Patent of Belgium, dated November 30th 1880, and numbered 53,073, for improvement in means for measuring the amount

of electrical current flowing through a circuit.

III. GERMANY. All those Letters Patent of the Empire of Germany, named in an instrument of sale and assignment made by Thomas Alva Edison to The Edison Electric Light Company of Europe, Limited dated March 1st 1881, and there described as follows:

- (1) Letters patent of the Empire of Germany, dated March 10th 1880 and numbered 9,165, for improvements in electric lamps.
- (2) Letters Patent of the Empire of Germany, dated February 7" 1881, and numbered 12,033 for methods for the measure of force consumed in the working of magneto electric machines.
- (3) Letters Patent of the Empire of Germany, dated January 25th 1881, and numbered 12,174 for improvements in electric lamps.

IV. FRANCE. All those Letters Patent of the Republic of France, named in an instrument of sale and assignment made by Thomas Alva Edison to The Edison Electric Light Company of Europe, Limited, dated March 1st 1881, and there described as follows:

- (1) Letters Patent of France numbered 127, 341, dated February 4th 1879, for method of and means for developing electric currents and lighting by electricity.
- (2) Letters Patent of France numbered 130, 910 dated August 25th 1879 for improvements in the production of electricity in the electric light &c.
- (3) Letters Patent of France, numbered 133, 756 dated January 20th 1880, for improvement in electric lamps and in the method of

manufacturing the same.

(4) Letters Patent of France numbered 130,910, dated February 20th 1880, for improvement in the production of electricity in the electric light &c.

(5) Letters Patent of France numbered 138,088, dated June 18th 1880 for improvement in electric lamps and in the method of manufacturing the same.

(6) Letters Patent of France numbered 136,399 dated July 5th 1880 for improvement in the utilization of electricity for light, heat and power &c.

(7) Letters Patent of France numbered 138,941 dated November 27th 1880 for improvement in dynamo or magneto electric machines and electric motors.

V. DENMARK. All those Letters Patent of the Kingdom of Denmark named in an instrument of sale and assignment made by Thomas Alva Edison to The Edison Electric Light Company of Europe, Limited, dated March 1st 1881, and there described as follows:

(1) Letters Patent of Denmark dated May 8th 1879, marked K.K. 1878, No. 2,269 for methods of and means for developing electric currents and lighting by electricity.

(2) Letters Patent of Denmark, dated June 11th 1880, marked K.K. 1879, No. 1210, for improvement in electric lights.

(3) Letters Patent of Denmark, dated February 27th 1880 marked K.K. 1879, No. 2,333 for improvement in electric lamps and in the methods of manufacturing the same.

(4) Letters Patent of Denmark, dated May 13th 1880 marked K.K. 1880; No. 14, for improvement in electric lamps and in the method of manufacturing the same.

(5) Letters Patent of Denmark, dated June 11, 1880 and marked K.K. 1879, No. 1210, (the specification therewith being marked as B. No. 369-1880 and 188-80) for magneto electric machines.

VI. SPAIN. All those Letters Patent of the Kingdom of Spain, named in an instrument of sale and assignment made by Thomas Alva Edison to The Edison Electric Light Company of Europe, Limited, dated \_\_\_\_\_ and there described as follows:

(1) Letters Patent of Spain, dated February 1, 1879, for improvement in the method of and means for developing electric currents and lighting by electricity.

(2) Letters Patent of Spain, dated October 4th 1879, for improvement in electric lights.

(3) Letters Patent of Spain, dated March 12, 1880, for improvement in electric lamps and in the method of manufacturing the same.

(4) Letters Patent of Spain, dated February 20, 1880, for improvement in electric lamps and in the methods of manufacturing the same.

(5) Letters Patent of Spain, dated January 19<sup>th</sup> 1881, for improvements in the utilization of electricity for light, heat and power &c.



VII. AUSTRIA. All those Letters Patent of the Empire of Austria, named in an instrument of sale and assignment made, by Thomas Alva Edison to The Edison Electric Light Company of Europe, Limited, dated \_\_\_\_\_ and there described as follows:

- (1) Letters Patent of Austria, dated June 30th 1879, for improvement in the method of and means for developing electric currents and lighting-by-electricity.
- (2) Letters Patent of Austria, dated January 22" 1880, for magneto electric machines.
- (3) Letters Patent of Austria, dated May 22" 1880, for improvement in electric lamps and in the method of manufacturing the same.
- (4) Letters Patent of Austria, dated July 25" 1880, for improvement in electric lamps and in the method of manufacturing the same.
- (5) Letters Patent of Austria, dated August 13, 1880 for improvement in electric lamps and in the method of manufacturing the same.
- (6) Letters Patent of Austria, dated October 5" 1880 for improvement in the utilization of electricity for light, heat and power &c.
- (7) Letters Patent of Austria, dated December 24" 1880, for improvements in dynamo or magneto electric machines and electric motors.
- (8) Letters Patent of Austria, dated January 7" 1881, for improvement in electric lamps and in carbons or incandescing conductors therefor, and in means for and methods of manufacturing the same.

(9) Letters Patent of Austria, dated January 6th 1881, for improvement in means for measuring the amount of electrical current flowing through a circuit.

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John H. Porter.  
George H. Lowrey.  
Geo. Wales Soren.  
Chas. Francis Stone.  
Geo. S. Hamilton.  
Wm. L. Porter.

P.O. Box 1836.

*Porter, Lowrey, Soren & Stone;*  
*Attorneys & Counsellors at Law.*  
*No. 3 Broad St. New York.*

April 11, 1881.

Gentlemen:--

An instrument of much importance to the Company, has been executed by Messrs. Edison, Banker and others and requires execution by the Company. For this a resolution should be passed at a meeting of the Directors, and I suggest that a meeting be called speedily for that purpose.

Very Respy.

G. W. Soren.

W  
DREXEL MORGAN & CO.  
Wall St Corner Broad.  
New York.  
DREXEL & CO.  
Philadelphia.  
DREXEL, HARRIS & CO.  
Paris.

New York April 19 1881.

J. A. Edison Esqre  
Present

Dear Sir,

On February 17<sup>th</sup> 1881, you made us the following proposition viz that you holding 51% of the shares of the ~~European~~ Edison Electric Light Company, offered us 25% of said shares at par, with the understanding that said 25%, together with the remaining 45% should be put in a syndicate to be managed by us for our mutual benefit, with a division of profits in proportion to our respective holdings. The bargain to be closed; and the shares of the said 25% to be paid for by us only after the station of the Edison Illuminating Company in New York works to the satisfaction of Messrs Tabbari, Wright & your goodself, for two weeks. We hereby beg to notify you of our acceptance of said propositions.

Yours very truly  
Drexel Morgan & Co.

Feb 17 1881

I have 51 per cent of shares

your related houses & partners in crime here  
take from me 25 per cent of my share  
at par & both our stock to be put in syndicate  
with div of profits in proportion 2  
holdings 6 shares & 6. closed after  
settle in my wife's 2 salaries of Feb 1881  
for 2 weeks

TAE

offer continues until  
2nd day march 1881

TAE

Extended until April 20  
1881

TAE

Office of the Edison Electric Light Company of Europe Limited,

19 William St.

New York, April 23rd, 1891.

Dear Sir:-

Written notice is hereby given that a special meeting of the Board of Directors of this Company will be held, pursuant to Article 8 of the By Laws, for the purpose of voting upon the following changes in the By Laws, pursuant to a resolution adopted at a special meeting of the Board of Directors held at the office of the Company, April 16th, 1891.

The proposed changes in the By Laws are as follows,

First, - Amend Section 1 of Article 5 so that it shall read as follows, viz, The officers of the Company shall be a President, First Vice President, Second Vice President, General Manager, Secretary, Treasurer and Assistant Treasurer.

Second, - Amend Section 7 of Article 5 so that it shall read as follows, viz, The First Vice President, during the absence or inability of the President, and the Second Vice President during the absence or inability of the President and First Vice President, shall preside at the meetings of the Directors, and of the Executive and Finance Committees, and shall in all other respects possess and exercise the powers and perform the duties of the President.

Third, - Amend Section 9 of Article 5 by adding at the end of Section the following, to wit, The Assistant Treasurer shall sign certificates of stock in the absence of the Treasurer whenever he shall be authorized so to do by the Directors.

Fourth, - Amend Section 2nd. of Article 1 by adding at the end of said Section the following words, to wit, Or until their successors shall be elected. Should this amendment be adopted the said Second Section will then read as follows, to wit, The term of office of the Directors shall be one year, or until their successors shall be elected.

The special meeting of the Directors, to be held for the purpose of voting on the foregoing changes in the By Laws, will be held at the office of the Company at half past three o'clock P.M. Wednesday, May 25th, 1891.

By order of the Board of Directors.

W. L. Perry  
Secretary

DREXEL MORGAN & CO.  
Wall St. Corner Broad.  
New York.  
DREXEL & CO.  
Philadelphia.  
DREXEL, CHARLES & CO.  
Paris.

New York April 27 1881

W. C. Edison Esq  
President

Dear Sir,

In view of what has  
just transpired in reference to the  
3000 of the Edison Electric Light  
3000 of Europe; and in order  
not to interfere with what  
you appear to think for your  
interests to do, in the disposition  
of the rights of that Company to  
certain parties for the City of Paris,  
we beg to notify you that we  
withdraw our letter of 19<sup>th</sup> inst  
accepting the option you gave  
us on Feb 17<sup>th</sup> thus cancelling the  
transaction and relieving you  
of any embarrassment in the  
matter.

Please acknowledge the  
above to ease your mind

Respectfully  
Drexel Morgan & Co  
Receipt acknowledged

Edison Machine Works,

104 Goerck Street,

New York, *Apr 27<sup>th</sup>* 1887.

*Copy*

Messrs. Drexel Morgan &  
City

Gentlemen,

I beg to acknowledge  
receipt of your favor of this date in-  
forming me that you release me from  
the option given you in mine of Feb'y  
17<sup>th</sup> last. Thanking you gentlemen,  
for your consideration in this matter  
I am,

Yours truly,  
(signed) Thom. A. Edison



1881-04-28

Line 223/2

STATEMENT  
OF THE  
*Edison Electric Light Company*  
*of Europe Limited*  
FOR 1881.

Exhibit F.



Assessment fixed at

\$ 101,660 #

*Aster*  
*Hayward*  
*Vanderhant*

Commissioner of Taxes and Assessments.

301 B

2160 8 Envelope

Weston

38-12880 40210 1911-04-28

Please state the full name of the Corporation. - L.C. Cash

STATEMENT made and delivered to the COMMISSIONER of TAXES and ASSESSMENTS OF the City and County of New York, for and in behalf of the

Radson Electric Light Company of Europe Limited

showing its condition for the purpose of assessment, on the first day of January, 1888, in pursuance of the provisions of TITLE IV., Chapter XIII, Part I., of the Revised Statutes of the State of New York, and of the Acts amendatory thereof, or in addition thereto, Chapter 654, Laws of 1853, and Chapters 456 and 536, Laws of 1857, and Chapter 240 of 1863.

Capital Stock actually paid in, or secured to be paid in \$ 2,000.00-0

Amount paid for Real Estate owned in Fee by the said Corporation :

Describing particularly by word numbers : - 6. Row

This Company was not fully incorporated till December 1880. The capital has been paid for American patents which have not yet any money value whatever. The Company has not yet sold a dollar worth of its property and has not yet earned any profit or income whatever from any source. It has no property within this State

Amount invested in the Stocks of other Corporations which are taxed upon their capital,

\$

Amount invested in U. S. Securities at par,

\$

Amount of Surplus Earnings,

\$

But If it is claimed that the Stock of the Company is worth less than par, state the actual value, and give the facts under oath, which will justify such estimate of its value. The Company's stock has not assumed any value upon any dealing with it prior to the time when it was a share of it being having himself before January 1887. Whatever value it has is not had by speculative use founded upon the possible future success of the company. It has never had any actual value with the company.

The principal office or the place of transacting the Financial Business of the said Corporation is situated in the (6 ems) Ward of the City of New York, at No. 19 William Street.

CITY OF NEW YORK, ss: I, William S. Perry the Secretary

of the said Corporation, being duly sworn, do hereby certify and declare that the foregoing statement is in all respects just and true.

Sworn to before me, this 28th day of April 1888. James A. Schuman Notary Public.

W. S. Perry

By Chap. 176, Sec. 6 of the Laws of 1851, the Commissioners are empowered to examine, under oath, the person representing the Corporation if they deem it necessary, to obtain any fuller or further particulars as to its property or condition.

(Copy)

Thomas A. Edison  
Keith

The Edison Electric  
Light Company  
Of Europe, Limited

Agreement

May 3<sup>rd</sup> 1881.

Executed in Duplicate

THIS AGREEMENT made the 3<sup>rd</sup>. day of May in the year One thousand eight hundred and eighty one, by and between Thomas A. Edison of Menlo Park in the State of New Jersey, United States of America, party of the first part, and The Edison Electric Light Company of Europe, Limited, a corporation organized under the laws of the State of New York, United States of America and having its principal place of business in the City of New York, State of New York, party of the second part:

WHEREAS by an agreement made April first One thousand eight hundred and eighty one by and between Theodore Puskas, Joshua F. Bailey, James H. Banker, and the said Edison, parties of the first part, and the said The Edison Electric Light Company of Europe, Limited, party of the second part the said Edison is under contract and agreement with the said Company to make application for Letters Patent for all the countries of Europe named in the said agreement, to wit: Belgium, Austria, France, Denmark, Germany, Russia, Italy and Spain, for all existing or future inventions in or relating to the development of electric currents and the application of electricity to the uses of light power and heat and made within the period of five years from May second, One thousand eight hundred and seventy nine.

AND WHEREAS: The said Edison now agrees with the said Company that he will extend the time within which he shall assign to the Company his certain inventions as herein set forth, and within which he shall make application for said inventions as follows, viz: from the date above set forth to wit: five years for

from May second One thousand eight hundred and seventy nine until the following date to wit: Five years from the twelfth day of January One thousand eight hundred and eighty one.

NOW THIS AGREEMENT WITNESSETH: That in consideration of the sum of one dollar in hand paid by the said Company to the said Edison, the receipt whereof is hereby acknowledged and in consideration of certain further benefits and advantages accruing to the said Edison wherefrom it is agreed as follows, viz:

FIRST. That the said Edison will for the benefit and on account of the said The Edison Electric Light Company of Europe, Limited, make applications in due form and promptly from time to time, as the inventions are made for Letters Patent of all the countries of Europe herein named, to wit: Belgium, Austria, France, Denmark, Germany, Russia, Italy and Spain for all existing or future inventions of the said Edison having reference to the production and general distribution of electricity for light, heat and Power, and made within the period of five years from the twelfth day of January 1881; and the said Edison shall and will from time to time as such Letters Patent are granted promptly assign the same to the said Company and make furnish, sign and execute in required form, and deliver to the Company or to its designated Attorney for that purpose all such applications specifications, drawings, powers of Attorney and other writings and all other instruments of assignment and conveyances as may be necessary to secure to the Company, the full use, enjoyment and benefit of, and the whole right, title and interest in all such inventions and Letters Patent, aforesaid, in and for all said countries of Europe.

SECOND: That this instrument is supplemental to the said agreement of April first, 1881, and is not to alter or change in any way the provisions of said agreement, save and except that, the date therein set forth, viz: five years from the second day of May, One thousand eight hundred and seventy nine, is changed so as to be as follows, to wit: five years from the Twelfth day of January, One thousand eight hundred and eighty one.

IN WITNESS WHEREOF The said Edison has hereto set his hand and seal and the said Company has caused its corporate seal to be hereto affixed and its corporate name to be subscribed the day and year first above written.

Witness to the signature  
of Thomas A. Edison,  
Samuel Insull.

Thomas A. Edison. (seal)

The Edison Electric Light Co.  
of Europe "Limited"

(L. S.)

by James H. Banker,  
Vice Pres.

Attest

W. S. Perry, Secretary pro tem.

State of New York

City & County of New York ss:

On this tenth day of May A.D. 1881, before me personally came James H. Banker and William S. Perry, to me known and known to me to be respectively the persons described in and who executed the foregoing instrument as the Vice President and the Secretary pro tempore of The Edison Electric Light Company of Europe, Limited,

the corporation described in and in whose behalf the same instrument was by them executed, and they severally acknowledged to me that they executed the same as the free act and deed of said Company for the uses and purposes therein mentioned: and thereupon the said James H. Banker being by me duly sworn, said that he resided in Irvington New York; that he was the Vice President of the said The Edison Electric Light Company of Europe, Limited, and that he signed the name of the said The Edison Electric Light Company of Europe Limited, and his own name as Vice President thereof, to the foregoing instrument by order of the Board of Directors of said Company; and the said William S. Perry, being by me duly sworn, said that he resides in the City of New York; that he was Secretary pro tempore of the said The Edison Electric Light Company of Europe, Limited, that he knew the corporate seal of said Company; that the seal affixed to the foregoing instrument was such corporate seal and was thereto affixed by him by order of the Board of Directors of said Company, and that by the like order he signed his own name to said instrument as Secretary pro tempore of said Company.

And on the same day before me personally came Thomas A. Edison, to me known and known to me to be the individual described in and who executed the foregoing instrument and he then acknowledged to me that he executed the same and for the uses and purposes therein mentioned.

In testimony whereof I have herunto set my hand and  
(L. S.) affixed my official seal this tenth day of May A. D. 1891  
Richard E. O'Brien, Notary Public Kings County  
(cert, filed in N.Y. Co.)

Edison Electric  
Light Co of  
Europe

May 7<sup>th</sup> 81

~~May to vote~~  
Holland share

New York May 7, 1881

I hereby authorizing Thomas  
A Edison to vote for me  
and in my name on all  
stock which may stand in  
my name on the books  
of the Edison Electric Light  
Company of Europe, Limited,  
at any and all meetings  
of said company, as  
fully as I might do if per-  
sonally present.

Thomas A Edison  
Witness  
J. F. Bailey.

Office of N. L. HUNTING,  
45 EXCHANGE PLACE,

New York, 24<sup>th</sup> May 1881

There will be a Special meeting of  
the Directors of the Edison Light  
of Europe Limited at their offices  
No. 65-67 Ave, to-morrow at  
3-30 P.M. for the purpose of voting  
on the changes in the By-Laws here-  
tofore proposed

By order of the President  
W. J. Perry,  
Secretary



Office of The Edison Electric Light Company of Europe, Limited.

New York, June 3rd, 1881.

T. A. Edison, Esq.

Dear Sir:

There will be a meeting of the Executive and Finance Committee of the Edison Electric Light Company of Europe, Limited, at the office of the Company, No. 65 Fifth Avenue; at half past three P.M., Tuesday, June Fourteenth, for the purpose of appointing an attorney in fact under direction of Mr. Serrell, Patent Counsel, to attend to the transfer of certain European Patents from Mr. Edison to this Company.

Very truly yours,



President.

# Agreement

Between

The Edison Electric  
Light Co. of Europe (Ld)

— and —

Thomas A. Edison.

Dated June 4<sup>th</sup> 1881.

# This Agreement

made at the  
City of New York,  
this 4<sup>th</sup> day of June in the year Eighteen hundred  
and eighty one, by and between The Edison  
Electric Light Company of Europe, Limited,  
a corporation organized under the laws of the State  
of New York, and having its principal office in the  
City of New York, State of New York, United States  
of America, hereinafter called "the Company", party  
of the first part, and Thomas A. Edison, of  
Menlo Park, in the State of New Jersey, United States  
of America, party of the second part, Witnesseth:

Whereas, In certain agreements heretofore made  
whereby the Company has obtained title to certain  
inventions and patents of Thomas A. Edison, a single  
word was accidentally omitted, to wit, the word "for"  
in consequence of which omission the meaning of the  
said agreements is possibly different from what was  
intended; and

Whereas, The said Edison now desires the Com-  
pany to rectify the said mistake, and the Company  
is willing to do so;

Now, in consideration of the premises and in  
further consideration of One dollar in hand paid by

receipt of the parties thereto to the other, the receipt  
whereof is hereby acknowledged, it is agreed as follows:  
First. That in the agreement made May second  
1879, by and between Thomas A. Edison, Theodore Puskas  
and Joshua A. Bailey, parties of the first part, and  
James M. Banker, party of the second part, the word  
"for" was unintentionally omitted between the words  
"currents," and the word "and" in the middle of the  
seventeenth line of the first page of the said agreement, and  
it is hereby agreed that the said agreement shall be  
altered and changed, and hereby is considered as  
altered and changed, so that the fifteenth, sixteenth,  
seventeenth, and eighteenth lines of the first page of  
the said agreement shall read, as follows, to wit:  
"Certain existing and future inventions of Edison  
relating to means for the development of  
electric currents for and the application of electricity  
to the uses of lighting, power and heating."

Second. That a similar correction may be  
made, and is hereby considered as made, in the  
agreement made the first day of April, 1881, by and  
between Thomas A. Edison, Theodore Puskas, Joshua

THE SIGNATURE



I Bailey and James H. Barker, parties of the first part, and The Edison Electric Light Company of Europe Limited, party of the second part, at the end of the sixth line from the bottom of the first page of the said agreement and at the end of the seventh line from the bottom of the third page of said agreement, so that both portions of said agreement may include, at the end of the said line between the words "electric currents," and the words "and the application," the word "for," to, the end that the said portions of said agreement may then read as follows: \_\_\_\_\_

"Future inventions of Edison in or relating to  
"the development of electric currents for and the  
"application of electricity to the uses of lighting,  
"power and heating" \_\_\_\_\_

Third That a similar correction may be made, and is hereby considered as made, in the middle of the third line from the bottom of the first page of the agreement made May 27, 1881, by and between the said Edison, and this Company, wherein the said word "for," was also accidentally omitted so that the said portion of said agreement

shall then read, as follows, to-wit:—  
"For all existing or future inventions, and for  
"leading to the development of electric currents  
"for and the application of electricity to the  
"uses of lighting, power and heating".—

Fourth. It is further agreed that the three  
agreements above referred to shall be amended and  
corrected, as above set forth, and shall hereafter be  
interpreted the same as if they had originally been  
written as now corrected, and that any and all  
parts of each and all of the said three agreements  
shall be construed and interpreted precisely the same  
as if the word "for" had not been omitted but had  
been originally set forth in the said three agreements  
as above explained.

In witness whereof the said Edison has hereto set his  
hand, and seal, and the said Company has caused its corporate  
name to be hereunto affixed, attested by its secretary, and its corporate  
name to be subscribed at the place and on the date above mentioned.

Witness my hand and seal this 23rd day of August 1888.  
J. A. Edison  
Secretary

Witness to the  
signature of  
J. A. Edison  
Samuel G. Hall

July 20, 1881



By these Presents, that I  
Charles Batchelor of Menlo  
Park, County of Middlesex and State of New Jersey, do  
hereby constitute and appoint Thomas A. Edison of Menlo  
Park aforesaid, Attorney and Agent for me, and in my  
name, place and stead, to vote as my proxy at the  
annual meeting of The Edison Electric Light Company  
of Europe, Limited, to be held on Wednesday the 27<sup>th</sup>  
day of July, 1881, or at any adjournment thereof, according  
to the number of votes I should be entitled to vote,  
if then personally present.

In witness whereof, I have hereunto set my  
hand and seal, this twentieth day of July, One thou-  
sand eight hundred and eighty one.

Signed, sealed and delivered  
in presence of  
Samuel Insull

Charles Batchelor



City and County of New York, } ss.



*S. G. Nichols* of the City of New York, and Principal  
Clerk in the Printing Office of the New York Journal of  
Commerce, being duly sworn, saith, that the Notice of which  
the annexed is a printed copy, has been published in the said  
New York Journal of Commerce (a News Paper printed and  
published in the said City of New York.)

Eleven times  
commencing on the *Fifteenth* day of  
*July* in the year One Thousand Eight  
Hundred and eighty *one*

Sworn to before me this

*26<sup>th</sup>* day of *July* 188*1*

*S. G. Nichols*

*Wm. Post*  
Notary Public, New York County

State of New York  
City and County of New York

William H. Meadowcroft

Being duly sworn says: that he is upwards of 21 years of age; that on the 21<sup>st</sup> day of July, 1881, he deposited in the Post Office in the City of New York notices of which the following is a copy, addressed to each of the stockholders of the Edison Electric Light Company of Europe, Limited, as the same appear on the list hereto annexed, and that the postage was prepaid thereon.



Subscribed and sworn to  
before me this 26<sup>th</sup> day of July, 1881.

Wm. H. Meadowcroft

L. C. Dineen  
Notary Public  
Edison Electric Light Co.





## List of Stockholders

of  
Edison Electric Light Co.  
of Europe, Limited

and  
Affidavit of mailing  
notices of annual meeting

Buchanan

We have no  
later now,

Sept 1. 01

Ashley Edward H. Care of David Morgan ✓ 3.

Banker Jas. H. Irvington, N. Y. ✓ 2583.

Bailey J. F. 14 Rue d'Albion, Paris, France ✓ 10.

Batchelor C. Muelo Park, N. Y. ✓ 781.  
450.

Brant John 161 Broadway, N. Y. ✓ 3.

Bathurst Chas. N. Y. City ✓ 10.

Bigman S. 105 Wooster St. N. Y. ✓ 15.

Bunkin Samuel of Puskas & Chaparles ✓ 200.

Carrman G. C. Muelo Park, N. Y. ✓ 4.

Carrman C. B. " " " " ✓ 6.

Charles Chas. L. 65 Fifth Ave. N. Y. ✓ 20.

9<sup>th</sup> Floor Commann Chas L. 9 Pine St " " ✓ 3.

Cornwell Eugene 196 Clinton Ave, Brooklyn ✓ 25.

Cox Henry 166 W. 55<sup>th</sup> St. N. Y. ✓ 25.

Colby C. A. 22 Nassau St " ✓ 20.

Coddington Herbert 59 Wace St, N. Y. ✓ 80.

Cutting P. L. 19 Wellman St. N. Y. ✓ 315.

Cutting P. L. Jr. " " " " ✓ 100.

Cutting H. L. " " " " ✓ 175.

Cunningham Miss Mary C. Nassau St, N. Y. ✓ 1.

Curtiss John H. 70 Fifth Ave. City ✓ 1.

de Puskas Francis of Puskas & Chaparles ✓ 2000.

Dean Chas L. Goerck Street, N. Y. ✓ 10.

Deering James New York City ✓ 10.

Divine Michael H. 50 Wall St N. Y. ✓ 5.

Dodson P. B. 59 Wace Street, New York ✓ 10.

Forward

64 15

2.

Forward		64.15
Earl H. M.	3 Broad Street, N. Y.	✓ 14.
Eaton S. B.	65 Fifth Ave N. Y.	✓ 10.
Edison Thos. A.	" " " "	✓ 77.00
Faber Alfred.	New York City	✓ 25.
Fabbri C. P.	3 Broad Street, N. Y.	✓ 1690.
Fish Jas. D.	78 Wall St. "	✓ 10.
Fook Fud H.	59 Wall St. "	✓ 50.
Garnia Mrs H.	9 Pine Street, N. Y.	✓ 1.
Griffin S. L.	Newark, N. J.	✓ 82.
Gostinhofer Ferd. C.	46 Exchange Place N. Y. City	✓ 3.
Harland Thomas.	261 Rway, N. Y.	✓ 4.00.
Hegawisch A.	27 Pine St. "	✓ 60.00
Imbroe H. J.	40 Rway. N. Y.	✓ 9.
Inaull Sam <sup>r</sup>	65 Fifth Ave. N. Y.	✓ 2.
Johnston L. C.	74 Hegawisch, 27 Pine St. N. Y.	✓ 30.
Joyce J. H.	47 William St N. Y.	✓ 9.
Johnston J. M. Jr	25 Broad - 54 Wall "	✓ 7.
Johnson Edward H.	65 Fifth Ave. N. Y.	✓ 10.
Judson Newton	34 Wall St. "	✓ 2.
Johnson Louis C.	74 Ruskas & Laportas	50.
Kreusi John	65 Washington St.	✓ 20.
Kring Chas H.	Corr Duvel, Morgan & Co	✓ 3.
Knight Geo. H.	do	✓ 3.
Forward.		16.605

3.

Forward		16605
Ladd Maud C.	New York City	✓ 2.
Livingston Herman	% Romanus Brown N. Y. City	✓ 1.
Mc Laughlin Frank	Oroville, Cal.	✓ 185.
Mc Nesson G. C.	91 Fulton Street, N.Y.	✓ 2.
Mackin H. B. & Co	2 Broad St. N.Y.	✓ 10.
Mott Samuel D.	65 Fifth Ave. "	✓ 10.
Morgan J. N.	15 William St. "	✓ 3.
Molherd Co	21 Wall St. "	✓ 11.
Nickerson J. H.	Nantucket Island, Mass	✓ 5.
Norris Mary R.	427 E. 56th St N.Y. City	✓ 1.
Pearsons Levi	115 East 28th St. "	✓ 10.
Pelton Amy R.	167 Broadway "	✓ 30.
Perry H. S.	70 Fifth Ave. N.Y.	✓ 280.
Pescott Mrs. C. B.	New York City	✓ 3.
Poston John K.	3 Broad St. "	✓ 10.
Puckas Gordon	Paris, France	✓ 460.
Puckas & Saportas	47 William St. "	✓ 1729.
Saportas A. J.	C/o. Puckas & Saportas, 47 William St.	✓ 3.
Smith Chester J.	Fall River, Mass. SS Broadway	2
Smith Lita P.	% Puckas & Saportas, 47 William St.	✓ 1.
Smith Mortimer T.	(Care David Morgan St)	✓ 3.
Smithers Mrs. Louis M.	46 Exchange Place, N.Y.	✓ 4.
Sublett Geo. H.	(198 Bow St Brooklyn)	✓ 3.
Schroder Chas.	9 Pine Street, N.Y.	✓ 2.
Spicer Geo. H.	3 Broad St. " "	✓ 10.
Forward		19385.

4.

Forward	19385.
Unger, Charles A. 46 Exchange Place, N.Y.	✓ 2.
Upton J. P. Minto Park, N.J.	✓ 425.
Watjen Louis 70 Broad St N.Y.	✓ 110.
Watjen, Joel E. " " " "	✓ 5.
Walton, <sup>James</sup> Fred Lenox, Mass.	✓ 1.
Walshstein M. 404 W. 23 <sup>d</sup> St. N.Y.	✓ 72.
Total	<u>20000.</u>

Office of the Transfer & Trust Co.  
New York, July 16<sup>th</sup> 1881

I hereby certify the foregoing to be a true & correct list of stock-holders of the Edison Electric Light Company of Europe, Limited, at the close of business ~~this~~ day July 15<sup>th</sup> 1881.

N. W. Bulkley  
Transfer Clerk

PROXY.

T. W. Roe & Co., Stationers, 68 Wall St., N.Y.

KNOW ALL MEN BY THESE PRESENTS,  
THAT I Thomas A. Edison  
do hereby constitute and appoint Samuel Insull

Attorney and Agent for ~~me~~ and in ~~my~~ name, place and stead, to vote  
as ~~my~~ proxy at the annual meeting of The Edison Electric Light  
'Co. of Europe, Limited, to be held July 27, 1881,  
according to the number of votes I should be entitled to vote if then  
personally present.

IN WITNESS WHEREOF, I have hereunto set my hand and seal  
this 27<sup>th</sup> day of July — one thousand eight <sup>hundred</sup>  
~~hundred and twenty~~ eighty one

Sealed and Delivered in the Presence of.

Thomas A. Edison



Geo. W. Johnson

Ballot for Directors of The Edison  
Electric Light Company of Europe,  
Limited, - July 27, 1881.

Votes

Thomas A. Edison

James H. Barker

Robert L. Cutting

Frederick W. Foote

S. B. Eaton

above the list voted for T. A.  
Edison in security stock  
bonded (7/400) shares -

S. S. S. S.  
Prosser

PROXY.

T. W. Ros & Co., Stationers, 68 Wall St., N.Y.

KNOW ALL MEN BY THESE PRESENTS,  
THAT I

do hereby constitute and appoint Major L. B. Eaton  
My

Attorney and Agent for me and in my name, place and stead, to vote  
as my proxy at a meeting of the stockholders of the  
Edison Electric Light Co. of Europe Limited  
according to the number of votes I should be entitled to vote if then  
personally present.

IN WITNESS WHEREOF, I have hereunto set my hand and seal  
this 27<sup>th</sup> day of July one thousand eight  
hundred and ~~seventy~~ eighty one

Sealed and Delivered in the Presence of

W. L. Perry

A. L. Cutting Jr.

Ballot for Directors of The Edison  
Electric Light Company of Europe,  
Limited, - July 27, 1881.

Votes

Thomas A. Edison  
James H. Barker  
Robert L. Cutting  
Frederick W. Foote  
J. B. Eaton

---

above ticket voted in behalf  
of R. L. Cutting for -  
one hundred shares (100)  
shares - J. B. Eaton proxy



PROXY.

T. W. Roe & Co., Stationers, 68 Wall St., N.Y.

KNOW ALL MEN BY THESE PRESENTS,  
THAT I

do hereby constitute and appoint Maj. J. B. Eaton  
My

Attorney and Agent for me and in my name, place and stead, to vote  
as my proxy at a meeting of the Stockholders of the  
Edison Electric Light Co. of Europe Limited  
according to the number of votes I should be entitled to vote if then  
personally present.

IN WITNESS WHEREOF, I have hereunto set my hand and seal  
this 27<sup>th</sup> day of July 1901 one thousand eight  
hundred and ~~seventy~~ eighty one

Sealed and Delivered in the Presence of

R. L. Carter W. Perry  
Witnesses  
T. W. Roe & Co., Stationers, 68 Wall St., N.Y.

Ballot for Directors of The Edison  
Electric Light Company of Europe,  
Limited, - July 27, 1881.

Votes

Thomas A. Edison  
James H. Barker  
Robert L. Cutting  
Frederick W. Foote  
P. B. Eaton

above ticket voted in ballot  
of W. J. Perry in two  
hundred & eighty (280)  
shares - J. M. Eaton  
J. M. Eaton

*Purchase Reports*  
*17/12/81*

Ballot for Directors of The Edison  
Electric Light Company of Europe,  
Limited.- July 27, 1881.

Votes

Thomas A. Edison  
James H. Barker  
Robert L. Cutting  
Frederick W. Foote  
P. B. Eaton

---

*Theo. Durley*  
*260 shares.*

Ballot for Directors of The Edison  
Electric Light Company of Europe,  
Limited.- July 27, 1881.

Votes

Thomas A. Edison  
James H. Barker  
Robert L. Cutting  
Frederick W. Foote  
P. B. Eaton

Ballot for Directors of The Edison  
Electric Light Company of Europe,  
Limited, - July 27, 1881.

Votes

Thomas A. Edison

James H. Barker

Robert L. Cutting

Frederick W. Foote

P. B. Eaton

I vote the above to elect  
ten (10) shares

S. H. Eaton

Ballot for Directors of The Edison  
Electric Light Company of Europe,  
Limited, - July 27, 1881.

Votes

Thomas A. Edison

James H. Barker

Robert L. Cutting

Frederick W. Foote

P. B. Eaton

I vote the above  
to elect on two  
shares

S. Ingersoll

State of New York

City and County of New York

J. M<sup>c</sup> Gowen and Charles F. Hammington,

Being severally duly sworn, each for himself says:  
that he will discharge with fidelity the duties  
of his office of Inspector of election of directors  
of The Edison Electric Light Company of Europe,  
Limited, at the annual meeting of the stockholders  
of said Company held this 27<sup>th</sup> day of July, 1881;  
that he will not receive any vote but such as  
he believes to be legal, nor reject any which he  
believes to be legal.

Subscribed and sworn to before me this 27<sup>th</sup> day of July, 1881.

J. M<sup>c</sup> Gowen.  
C. F. Hammington

W. H. Meadowcroft

Notary public

N. Y. Co.

State of New York }  
City and County of New York } ss:-

We, J. M. Gowen and Charles D. Harrington,  
the Inspectors of the election of Directors had at  
the annual meeting of the Stockholders of the  
Edison Electric Light Company of Europe, Limited,  
held this 27<sup>th</sup> day of July, 1881, hereby report  
that having first taken and subscribed the oath  
hereto annexed, we entered upon the duties of  
our office as such Inspectors as, aforesaid; that  
on the closing of the polls we canvassed and  
counted the vote cast, and find that there was  
present at such meeting, in person or by proxy,  
holders of Ten thousand two hundred and eighty  
one shares of the Capital stock of the said Company  
that there were cast at such election Ten thousand,  
two hundred and eighty one (10,281) votes, and  
that all of them were cast for the following  
named persons as Directors for the ensuing year,  
namely, Thomas A. Edison, James H. Barker,  
Robert L. Culling, Frederick W. Took and S. B.  
Edson.

Dated July 27, 1881

J. M. Gowen  
C. D. Harrington

State of New York }  
City and County of New York } ss:-

On this 27<sup>th</sup> day of July, 1881, before me

personally appeared F. M. Gowan and Charles  
F. Harrington, who being by me severally duly  
sworn, each for himself said; that the fore-  
going report by him signed was in all  
respects true.

W. H. McAdams  
Notary public  
N. Y. C.

Office of Inspector of  
Election of the annual  
meeting of the  
Elm Grove Club C. of  
Elm Grove, N. Y.  
and Inspector's Report

Blank No. 1.

# THE WESTERN UNION TELEGRAPH COMPANY

This Company TRANSMITS and DELIVERS messages only on condition, limited by law, that the sender shall be responsible for the accuracy of the message and for the payment of the charges thereon.

Receipts for money received by the Company shall be returned to the sender by request of the sender under the conditions stated above.

A. R. JONES, Sec'y.

NORVIN GREEN, President.

Date: *Christ Math Mental Surgery*  
Received at: *791 BROADWAY*  
To: *Edison*

READ THE NOTICE AT THE TOP.

*Have directed advance  
your four thousand  
account European matter  
Pending arrival leave  
for New York next  
Saturday with arrange  
everything satisfactorily.*

THIS MESSAGE HAS JUST BEEN RECEIVED AT THE OFFICE IN

791 BROADWAY, near Tenth Street.

WHERE ANY REPLY SHOULD BE SENT

*22 p.m. 1st* Direct Wires. *Cuskas*



THOMAS A. EDISON,  
MENLO PARK, N. J.

24<sup>th</sup> Aug 1882

J. H. Eaton Esq  
Second Vice President  
Edison Electric Light Co of Europe  
65 Fifth Avenue  
New York

Dear Sir,

I beg to enclose you herewith  
a statement of Mr Edison's accounts  
against the European Co showing a  
balance due him at this date of  
\$2780.<sup>27</sup>/<sub>4</sub>

I have separated the expenses  
incurred on account of the Paris  
Exposition from those incurred  
in the general business of the European  
Company.

I would be glad if you would  
treat the accounts we originally  
rendered as withdrawn although  
I return them herewith in order  
to enable you to compare them  
with those now presented. In the  
old account you were debited  
with the cost of a diagram which  
although made for the Paris  
Exposition was never sent there.  
The total cost of this was \$54.<sup>40</sup>/<sub>4</sub>

186

I have withdrawn this amount  
entirely from the account. I have  
also withdrawn \$850 money advanced  
to Ph. Leibel. This we are endeavouring  
to collect from him personally. I  
have also taken out of the account  
the sum of \$1594 <sup>74</sup>/<sub>100</sub> cost of a pump  
& engine sent to Mr. Hatchelow. This  
was put in the account in error in  
the first place. I have now rendered  
it to the Society Industriels et  
Commerciales d'Edou. Other amounts  
to the sum of \$280 <sup>86</sup>/<sub>100</sub> have also  
been withdrawn.

The principal additions to the account are composed of payments to Dr. Moxes on account of his expenses in taxes during the Exposition. I have repeatedly asked him to render a complete account but for some reason or another he has not done so.

If you require any reasonable explanation of these accounts I shall be happy to give it & if you think it necessary I will attend the Board meeting at which they are considered.

Yours truly,  
Thos Addison President

THE EDISON ELECTRIC LIGHT COMPANY OF EUROPE,  
[LIMITED.]

65 FIFTH AVENUE.

NEW YORK, Sept. 8th, 1881.

*Mr. Thomas A. Edison*

Dear Sir:

In order to raise money for current expenses the Board of Directors has decided to issue Debenture Bonds running for three years at six per cent., redeemable by the Company at any time on sixty days notice. The Directors have decided to offer these bonds in the first instance to the Stockholders of the Company, who are requested to subscribe for them in the proportion of one dollar for every share of stock held by each Stockholder. It is important that each Stockholder should thus take his share, thereby doing away with the necessity of offering the bonds to the public.

You appear on the books of the Company as a Stockholder holding 7700 shares of stock, accordingly your subscription to these Debenture Bonds, on the above basis, would amount to 7700 — dollars. You are earnestly requested to make that subscription, and, should you decide to do so, to forward a check for the amount, drawn to the order of The Edison Electric Light Company of Europe (Limited), to the undersigned.

Any further information that may be desired will be promptly furnished.

Respectfully yours,

S. B. EATON,

Second Vice-President.

14 Rue de Valenciennes  
Paris, Sept. 18. 1881

Dr J. A. Edison

65. Fifth Avenue

New York, U.S.A.

My dear Sir,

As you said to me on the  
eve of my departure for Europe you would  
see I was suitably rewarded, allow me  
to suggest something towards that end  
which will be for our mutual benefit.

Give me an option for six months  
(and as much longer thereafter as you  
wish) on 500 shares of your European  
Electric Light Co. stock at 75 which is  
the market price, and I will divide  
with you all over that amount I receive.

Hoping to have an early affirmative  
reply by cable, I am

Faithfully yours,

Otto A. Moses

Received of Thomas A. Edison  
Fifty shares of the Edison Electric Light  
Co of Europe Capital Stock for account  
of Otto A. Moses as per his letter to  
me of December 27<sup>th</sup> 1881

A. Moses

THE EDISON LAMP CO.,

Thos. A. Edison,  
Chas. Batchelor,  
Francis R. Upton,  
Edward H. Johnson.

Menlo Park, N. J., Sept 19 1881

T. A. Edison, Esq.  
65 Fifth Ave.

Dear Sir:

Your  
check for \$500 in pay-  
ment for option on  
200 shares of European  
given you. I hope you  
may make the money  
back.

Yours Truly  
Francis R. Upton.

Testy.

H. Anstice & Co., Stationers, 25 Nassau Street, N. Y.

Know all Men by these Presents,  
That I Edward A. Johnson

do hereby constitute and appoint Samuel Insull  
my

Attorney and Agent for me, and in my name, place and stead, to  
vote as my proxy at ~~any session of meeting~~ of the  
~~of the Stockholders of the Edison~~  
~~Electric Light Company~~  
according to the number of votes I should be entitled to vote, if then  
personally present.

In Witness whereof, I have hereunto set my hand and seal,  
this ~~twenty first~~ day of ~~September~~ one thousand eight  
hundred and eighty ~~one~~

Sealed and Delivered in the Presence of

T. A. Edison

Edw. A. Johnson

ENCL. ADDRESS,  
"GOURAUD, LONDON."

London, Sept 28<sup>th</sup> 1881

J. A. Edison Esq  
65, Fifth Avenue,  
New York,

Dear Sir, Edison Electric Light Stock of Europe  
Referring to your letter of August 24<sup>th</sup>  
I thank you very much for the explanation and  
am very sorry I did not better understand  
you. It was quite my own fault that I did  
not. Having recently cabled you about getting  
options on European Telephone Stocks I thought  
there might be some confusion. I hope that  
another opportunity will arise, when you may  
be good enough to remember me.

Yours truly,

Wm. H. Wood

$$\begin{array}{r} 16\frac{2}{3} \\ 25 \end{array}$$

$$\begin{array}{r} 43\frac{2}{3} \\ 22 \\ \hline 25\frac{2}{3} \end{array}$$

Oct 15, 1881.  
 Letter from Mr. Quaker  
 concerning delivery of  
 books to our store

59 WALL STREET  
NEW YORK.

Oct 15th 1881.

To Edison Electric L<sup>t</sup> Co of N. Y.,  
Limited

There is due me by your Co.  
 Forty four hundred dollars,  
 I accept the new bonds at 80  
 in payment, which please deliver  
 to Edmund M. Foote, or order.

*Thos. Parker*



*The Edison Electric Light Company  
of Europe Limited*

*No Answer*

*65 Fifth Avenue, New York* October, 18th, 1881

Sir:--

A special meeting of the Directors of the Edison Electric Light company of Europe Limited, will be held at the office of the Company No. 65 Fifth Ave., at 3.30 P.M. Oct. 31, 1881, for the following objects:

- 1st. For the purpose of considering the question of creating a debenture bond indebtedness.
- 2nd. For the purpose of considering a contract between this Company and a Paris Syndicate.
- 3rd. For the purpose of determining the compensation to be allowed to Messrs Puskas & Bailey.
- 4th. To consider and determine the amount of compensation to Mr. Edison & Mr. Charles Batchelor. Also to Mr. Eaton.

Yours truly,



*Second Vice Pres. & Genl. Manager*

To  
*Mr. A. Edison, Esq.*

*Edison Light*  
*Oct 19.81*

OFFICE OF THE

EDISON ELECTRIC LIGHT CO. OF EUROPE, LIMITED,

65 FIFTH AVENUE, N. Y.

October 19, 1881.

Sir:

*A Special Meeting of the Stockholders of this Company will be held at the office of the Company, No. 65 Fifth Avenue, New York City, at 3:30 o'clock, P. M., November 4, 1881, for the purpose of considering the question of creating a debenture bond indebtedness; also of making contracts with a Paris syndicate and others for manufacturing plant and managing the business of the Company in Europe.*

*Respectfully,*

S. B. EATON,

*Second Vice-President and General Manager.*

(Oct. 19 '81)

Mem. for Mr. Lusk

2.45 P. M. - It seems as  
some cables came last  
night - You said nothing  
to me abt them this  
morn. I don't think the  
way this cabling bus. is  
managed is right -  
Things relating to the  
Ensign Co. I ought

to see - Mr. <sup>W. H. Gardner</sup> ~~Gardner~~ has  
been sitting in my  
room now nearly an  
hour, waiting for you  
to come in - I had  
to simply admit that I  
knew nothing abt the  
cables. You see it makes  
me appear negligent -

W. H. P. M. T. B. F.

v. l.

European Eagle

1881.

Oct 19, 81

2. Sec. Ch. Co.  
of Caspe

Eaton to Caspe

at this time

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land to the

KNOW ALL MEN BY THESE PRESENTS

that

I, THOMAS ALVA EDISON of the town of Menlo Park in the county of Middlesex and State of New Jersey, United States of America, do hereby make, constitute and appoint JOSHUA FRANKLIN BAILEY of 33 Avenue de l'Opera, City of Paris, France, my true, sufficient and lawful attorney for me and in my name to execute a certain contract heretofore made by and between myself and a certain Syndicate or Company, formed in the City of Paris for the purpose of exploiting the Edison system of furnishing light, heat and power by electricity in the countries of Spain, France, Belgium, Austria, Germany, Italy, Denmark and Russia: and also to execute a certain other contract, if any there be, between myself and a certain syndicate or Company formed at Paris, France, for the purpose of manufacturing plant for the system of furnishing light, heat and power by electricity, known as The Edison system, and belonging to the Edison Electric Light Company of Europe, Limited, a corporation created and existing under the laws of the State of New York, United States of America, in the countries aforesaid: and also, in case the exploiting of the Edison system as aforesaid and the manufacturing of plant therefor as aforesaid shall be embraced in one single contract instead of two contracts as



above referred to, to execute said contract both for exploiting the said system of furnishing light, heat and power by electricity in the said countries, belonging to the Company, as aforesaid, and also for manufacturing plant therefor; and also to execute any other contract or contracts with the said syndicate or syndicates, company or companies for the following purpose, namely, exploiting the Edison system in said countries as aforesaid and manufacturing plant therefor as aforesaid; but this power of attorney is however granted subject to the following conditions and limitation, namely, that any and all contracts executed by the said Bailey in my name under and pursuant to this power of attorney shall first be approved of in writing by Grosvenor Porter Lowrey of the City of New York, and Charles Batchelor of the town of Menlo Park, County of Middlesex, New Jersey, both temporarily residing at Paris, and power is hereby granted to the said Bailey to execute only such contracts and agreements (which must in every case relate to the subject matter above set forth) as shall bear the written approval, written on the face of said contracts or both the said Lowrey and the said Batchelor; and the said Bailey is hereby fully empowered and authorized, subject to the foregoing condition or limitation touching the written approval of the said Lowrey and Batchelor, to do and perform all necessary acts in the execution and prosecution of the aforesaid business in as full and ample a manner as I might do if personally present.



10

PROXY.

THOMAS W. HOL, Stationer, 31 Wall St., N. Y.

KNOW ALL MEN BY THESE PRESENTS,  
 THAT I, Mary A. Whiting  
 do hereby constitute and appoint Ely Fabbri

Attorney and Agent for me and in my name, place and stead, to vote  
 as my proxy at the next meeting of the Edison  
Electric Light Company of Europe  
 according to the number of votes I should be entitled to vote if then  
 personally present.

IN WITNESS WHEREOF, I have hereunto set my hand and seal  
 this second day of November one thousand eight  
 hundred and eighty one Mary A. Whiting

Sealed and Delivered in the Presence of

Leokakaw



10

PROXY.

THOMAS W. HOL, Stationer, 31 Wall St., N. Y.

KNOW ALL MEN BY THESE PRESENTS,  
 THAT I, Bradford A. Whiting  
 do hereby constitute and appoint Ely Fabbri

Attorney and Agent for me and in my name, place and stead, to vote  
 as my proxy at the next meeting of the Edison  
Electric Light Company of Europe  
 according to the number of votes I should be entitled to vote if then  
 personally present.

IN WITNESS WHEREOF, I have hereunto set my hand and seal  
 this second day of November one thousand eight  
 hundred and eighty one Bradford A. Whiting

Sealed and Delivered in the Presence of

Mr. R. Keelson





## PROXY.

THOMAS W. ROE, Stationer, 61 Wall St., N. Y.

KNOW ALL MEN BY THESE PRESENTS,  
 THAT I Lamartine Whiting  
 do hereby constitute and appoint E. G. Fabbri

Attorney and Agent for me and in my name, place and stead, to vote  
 as my proxy at the next meeting of the  
Edison Electric Light Company of Europe  
 according to the number of votes I should be entitled to vote if then  
 personally present.

IN WITNESS WHEREOF, I have hereunto set my hand and seal  
 this second day of November one thousand eight  
 hundred and eighty one Lamartine Whiting

Sealed and Delivered in the Presence of

Bartholomew A. Whiting

## PROXY.

THOMAS W. ROE, Stationer, 61 Wall St., N. Y.

KNOW ALL MEN BY THESE PRESENTS,  
 THAT I, A. E. Cergna  
 do hereby constitute and appoint E. G. Fabbri

Attorney and Agent for me and in my name, place and stead, to vote  
 as my proxy at the next meeting of the  
Edison Electric Light Company of Europe  
 according to the number of votes I should be entitled to vote if then  
 personally present.

IN WITNESS WHEREOF, I have hereunto set my hand and seal  
 this second day of November one thousand eight  
 hundred and eighty one

Sealed and Delivered in the Presence of

J. M. BiggioA. E. Cergna

PROXY.

W. Reid Gough, Law Clerk, Publisher and Stationer, 50 Nassau St., N. Y.

Know all Men by these Presents, That  
J. Thomas A. Edison

do hereby constitute and appoint Samuel Insull

Attorney and Agent for me and in my name, place and stead, to vote as  
 my proxy at any election meeting of the stockholders  
of the Edison Electric Light Co. of Europe  
 according to the number of votes I should be entitled to vote if then personally  
 present.

In Witness whereof, I have hereunto set my hand and seal  
 this 24th day of Nov 1888 one thousand eight hundred  
 and eighty one

Sealed and delivered in the presence of

C. P. Mott

Thomas Edison



PROXY.

W. Reid Gough, Law Clerk, Publisher and Stationer, 50 Nassau St., N. Y.

Know all Men by these Presents, That  
J. Charles I. Clark

do hereby constitute and appoint Samuel Insull

Attorney and Agent for me and in my name, place and stead, to vote as  
 my proxy at any election Meeting of the stockholders of the  
Edison Electric Light Co. of Europe  
 according to the number of votes I should be entitled to vote if then personally  
 present.

In Witness whereof, I have hereunto set my hand and seal  
 this 14th day of November one thousand eight hundred  
 and eighty one

Sealed and delivered in the presence of

J. H. Mott

Charles I. Clark



PROXY.

W. Reel Compt, Law Blank Publisher and Stationer, 126 Nassau St. N. Y.

Know all Men by these Presents, That  
 I, M. F. Moore

do hereby constitute and appoint Samuel Inman

Attorney and Agent for me and in my name, place and stead, to vote as  
 my proxy at any election Making of the Stockholders of the  
Edison Electric Light Co. of Europe  
 according to the number of votes I should be entitled to vote if then personally  
 present.

In Witness whereof, I have hereunto set my hand and seal  
 this 10<sup>th</sup> day of December one thousand eight hundred  
 and Eighty one

Scaled and delivered in the presence of

Wm. H. Meadowcroft

M. F. Moore

PROXY.

W. Reel Compt, Law Blank Publisher and Stationer, 126 Nassau St. N. Y.

Know all Men by these Presents, That  
 I, L. P. Mott

do hereby constitute and appoint Samuel Inman

Attorney and Agent for me and in my name, place and stead, to vote as  
 my proxy at any election Making of the Stockholders of the  
Edison Electric Light Co. of Europe  
 according to the number of votes I should be entitled to vote if then personally  
 present.

In Witness whereof, I have hereunto set my hand and seal  
 this 4<sup>th</sup> day of December one thousand eight hundred  
 and Eighty one

Scaled and delivered in the presence of

Rich. H. Dyer

L. P. Mott

Know all Men by these Presents, That  
 I, S. I. Mott

do hereby constitute and appoint Sam. Insull

Attorney and Agent for me and in my name, place and stead, to vote as  
 my proxy at any ~~meeting~~ Meeting of the shareholders of the  
Edison Electric Light Cos. of Europe  
 according to the number of votes I should be entitled to vote if then personally  
 present.

In Witness whereof, I have hereunto set my hand and seal  
 this 4<sup>th</sup> day of November one thousand eight hundred  
 and eighty one

Sealed and delivered in the presence of

S. I. Mott

O. D. Mott

Know all Men by these Presents, That  
 I, Frank M. Laughlin

do hereby constitute and appoint Samuel Insull

Attorney and Agent for me and in my name, place and stead, to vote as  
 my proxy at any ~~meeting~~ meeting of the shareholders  
of the Edison Electric Light Co. of Europe  
 according to the number of votes I should be entitled to vote if then personally  
 present.

In Witness whereof, I have hereunto set my hand and seal  
 this 4<sup>th</sup> day of November one thousand eight hundred  
 and eighty one

Sealed and delivered in the presence of

C. P. Hamilton

Frank M. Laughlin

State of New York

City and County of New York

William H. Meadowcroft being  
duly sworn says: That on the 20<sup>th</sup> day of  
October, 1881, he deposited in the Post Office in  
the said City of New York notice, - of which the  
annexed is a copy, - addressed to the stockholders  
of the Edison, Electric Light Company of Europe, Limited,  
as the same appear on the list hereto annexed,  
and that the postage was prepaid thereon.

Subscribed and sworn to before  
me this 4<sup>th</sup> day of November, 1881

W. H. Meadowcroft

Notary Public N.Y.C.  
T. W.

[ATTACHMENT]

OFFICE OF THE  
EDISON ELECTRIC LIGHT CO. OF EUROPE, LIMITED,  
65 FIFTH AVENUE, N. Y.

October 19, 1881.

Sir:

*A Special Meeting of the Stockholders of this Company will be held at the office of the Company, No. 65 Fifth Avenue, New York City, at 3:30 o'clock, P. M., November 4, 1881, for the purpose of considering the question of creating a debenture bond indebtedness; also of making contracts with a Paris syndicate and others for manufacturing plant and managing the business of the Company in Europe.*

*Respectfully,*

S. B. EATON,

*Second Vice-President and General Manager.*

5

List of Stockholders  
of Union Electric Light  
Co. of Europe Limited  
from which notices of special  
meeting were sent Oct 20/87

*[Faint handwritten notes and signatures, including names like "J. E. ...", "W. ...", and "C. ..."]*

*[Faint handwritten notes and signatures, including names like "J. E. ...", "W. ...", and "C. ..."]*

Ashley Edward H.	Care Dept Morgan Ho.	3.
Byrne James L.	Railway N.Y.	5.
Harpe Henry H.	48 South St. N.Y.	22.
" Mrs. Sadie B.	" "	3

Ranper James H.	Drumstick, N.Y.	3583.
Railey J. F.	33 Avenue de l'Opera, Paris, France	100.
Ranta Virland J.	42 Wall St. N.Y.	100.
Ratchelor E.	Palais de l'Industrie, Paris, France	781.
Rant John	161 Broadway, N.Y.	3.
Rathurst Charles	N. Y. City	10
Bergman S.	106 Woodford Street, N.Y.	15.
Bunker Samuel	Care Bunker & Sargent	200.
Burns Charles A.	24 Broad St.	100.

Carman L. E.	Mano Park, N.J.	4.
" G. B.	" " "	6.
Chase Chas L.	65 Fifth Ave, N.Y.	20.
Caymann Chas L.	9 Louis St. N.Y.	3.
Chase & Higginson	24 Chris St. City	10.
Cinqué J. C.	48 South St. City	2.
Croft Eugene	196 Clifton Place, Brooklyn	25
Croft J. H.	48 South St. City	5
C. J. Jenson	"The Wyoming", 55th St. + 7th Ave, City	25
Coffey E. H.	22 Nassau St., N.Y.	20
Coddington Herbert	39 Wall St. N.Y.	10.
Cutting R. L.	19 William St.	315.
" " " Jc.	" " "	100.
" " " L.	" " "	175.
Cunningham Mary	Care Bunker & Sargent	1
Forward		5646



Forward		5646.
Curtiss John W.	70 Fifth ave. N.Y.	1.
de Buskag Francis	de Buskag's Report	2000.
Dean Charles L.	107 Goerck St. N.Y.	10.
Deaving James	New York City	10.
Dove Michael W.	50 Wall St. N.Y.	5.
Dodson R. B.	59 Wall St. New York	5.
Edison Thomas A.	65 5 Ave	6190.
Earl Mrs M.	3 Broad Street, N.Y.	14.
Eaton L.B.	65 5 Ave. N.Y.	5.
Emerson Mrs Key Bond	24 Broad St. N.Y.	50.
Faber Alfred	New York City	15.
Fabbri E.	3 Broad Street, N.Y.	1690.
Fish James O.	78 Wall " " "	10.
Forbes John E.	44 South St. N.Y. City	1.
Frank Fred W.	Care J. J. Casco } 59 Wall St. N.Y. City }	50.
Garnier Mrs H.	9 Pine St. N.Y.	1.
Giffen S. L.	Newark, N. J.	77.
Gottshofer Frederic C.	46 Exchange Place, N.Y.	3.
Goddard Calvin	65 Fifth ave	5.
Harland Thomas A.	261 Broadway, N.Y.	250.
Hegewisch A.	27 Pine Street "	40.
Houston Thomas	24 Broad St.	50.
Jaffray Robert Jr	46 Wall St. N.Y. City	1.
		16129

Forward		16129.
Jaffray Mrs. Lydia	1 Butler 46 Wall St. N.Y.	1.
Comrie N. T.	40 Broadway, N.Y.	9.
Jehl Francis	104 Grand St. N.Y.	3.
Johnston L. C.	7 A. Hegewisch 27 Bond St. N.Y.	30.
Jones F. H.	47 William St. N.Y.	9.
Joynton F. H. Jr.	25 Broad St. N.Y.	7.
Johnson David H.	6 Cornhill St. London, England	10.
"	Charl. Jr. N.Y. City	100.
Judson Newton	34 Wall St. N.Y.	2.
Ensull Samuel	65 Fifth Ave "	26.
Kuusi John	60 Washington St. N.Y.	20.
King Charl. H.	Care David Morgan 15 N.Y.	3.
Knight Geo. H.	" "	3.
Ladd Maud C.	New York City	2.
Leonard Robt. H.	24 Broad St. N.Y.	100.
Livingston Herman	of Romanie Brown, N.Y. City	1.
McLaughlin Frank	Oroville, Cal.	175.
McKesson G. C.	91 Fulton St. N.Y.	2.
Meachowcraft W. H.	85 5th Ave	1.
Meeker H. B. & Co.	11 Broad St. N.Y.	10.
McLean T.	South St. N.Y.	3.
Milne Dick	Hatfield, Conn	200.
McGuinness John Jr.	30 Broad St. N.Y.	5.
McJannet C. M.	64 Wall St "	15.
Mott Samuel D.	65 Fifth Ave "	10.
Morgan T. H.	15 William St "	3.
Forward		16879.

16879.

Forward  
 Moore H. H. 65 5 Ave. N.Y. 5.  
 " N. F. do " " 5.  
 Mother & Co. 21 Wall St., N.Y. 11.  
 Holt Charles P. 65 5th Ave N.Y. 5.

Nicholson, J. H. Nantucket Island, Mass. 5.  
 Norris Mrs Mary R. 427 E. 50th St., City 1.

Parsons Levi 115 East 28th St. 10.  
 Pelton Guy R. 167 Broadway 29.  
 Perry H. S. 70 Fifth Ave. N.Y. 131.  
 Peacock Mrs C. B. N. Y. City 3.  
 Peter John K. 3 Broad St., N.Y. 10.  
 Puskas Theodore 33 Ave. de l'Opera Paris, France 200.  
 " Sabotier 417 William St N.Y. 1131.

Randolph Margaret J. N.Y. City 2.  
 Roberts John E. 154 W. 22nd St., N.Y. 40.

Saportas A. 417 William St., N.Y. 13.  
 Samson R. L. Co. Daniel Morgan To 100.  
 Smith Charles J. Fall River, Mass. 2.  
 " Lutz V. " " " " 1.  
 " Mortimer J. Co. Daniel Morgan To 3.

Smithers Mrs Louisa M. 46 Exchange Place, N.Y. 4.  
 Schroder Chas. 9th Ave. N.Y. 2.  
 Sonn Geo. H. 3 Broad Street, N.Y. 10.  
 Squires C. H. N.Y. City 5.  
 Syllock George H. 198 Ross St. 3.  
 Howard. Brooklyn 186100.

Forward

18610.

Unger Chas & Co. 46 Exchange Place, N.Y. 2.  
 Upton F. R. Mules-Bail, N.Y. 425.

Van Hoffman L. & O. 50 Wall St. N.Y. 150.

Wägen Louis 70 Broad St. N.Y. 110.  
 " Tort & Co. " " " 5.

Watton Jand Leuce, Mass. 1.  
 Warrick Schuyler St. & Co. 500.

Wallerstein H. 174 William St. City 72.  
 Whiting Miss Maryb. 48 South St. 10.

" Bradford St. " 10.

" Lannartine " 5.

Zaproskie Cornelia Barrett 241 Broad St 100.

Total

20000.

Office of the Farmers Loan & Trust Co.  
 26 Exchange Place, New York

I hereby certify that the foregoing is a true  
 and correct list of the stockholders of the  
 Edison Electric Light Co. of Europe Limited  
 at the close of business this day (Oct 19, 1887)

H. H. Dinkley,

Transfer Clerk

(Copie)

Entre

1. M. Thomas Alva Edison demeurant à New York représenté par M. Joshua F. Bailey, actuellement demeurant à Paris, 33 Avenue de l'Opéra en vertu des pouvoirs ci annexés.

2. La Edison Electric Light Company of Europe Limited, dont le siège est à New York représenté par M. Joshua F. Bailey (adresse ci-dessus) en vertu des pouvoirs ci annexés, et ci-après nommée la Light Company.

M. Edison et la Light Company agissant conjointement et solidairement.

d'une part.

Et M. Charles Porgès demeurant à Paris Rue Blanche N° 2,

et M. Elis Léon demeurant à Paris, Rue Lesneux N° 1,

d'autre part.

Il a été expliqué ce qui suit:

M. Edison et la Light Company, desirant assurer la mise en valeur des brevets pris et à prendre dans les différents pays d'Europe ci-après indiqués pour les inventions de M. Edison pour mesures distribuer et appliquer les courants électriques pour la production de la lumière électrique et de la force motrice; et M. Porgès et M. Léon étant disposés à se charger des arrangements financiers et commerciaux nécessaires à cet effet, les parties ont convenu entre elles ce qui suit:

Art. 1<sup>er</sup> M. Porgès et M. Léon s'engagent

à former dans un délai des six semaines de la date de ces présentes, trois sociétés anonymes, sous le régime de la loi du 24 juillet 1867, savoir:

- 1° La Société de Fabrication.
- 2° La Société d'Exploitation.
- 3° La Société des installations isolées.

Lesquelles Compagnies fonctionneront et agiront dans les conditions ci après indiquées.

Art. 2° La durée de la Compagnie d'exploitation sera de cinquante années avec un capital de Un million de francs divisés en quatre cents actions de deux mille cinq cents francs chacune, qui ne pourront être fractionnées en nombre plus grand d'actions d'une somme moins élevée pendant cinq ans. M<sup>r</sup>. Edison et la Light Company s'engagent d'ores et déjà et solidairement à apporter à cette société tous les brevets déjà pris tels qu'ils se poursuivent et comportent sans autre garantie que celle de leur existence par M<sup>r</sup>. Edison pour les dites inventions ainsi que pour tous objets ou appareils pouvant être utilisés pour la lumière électrique et leur vente en ce qui concerne l'exploitation ou la fabrication. M<sup>r</sup>. Edison et la Light Company s'engagent aussi à apporter tous brevets pour les nouvelles inventions à prendre pendant cinq ans du jour des présentes par M<sup>r</sup>. Edison.

Cette convention ne s'applique qu'aux pays suivants:

- 1° La France et les Colonies françaises  
(Paris et sa banlieue, y compris Versailles  
exceptées).
- 2° La Belgique.
- 3° La Danemark.
- 4° L'Empire d'Allemagne.
- 5° L'Autriche et la Hongrie.
- 6° La Russie.
- 7° L'Italie.
- 8° L'Espagne (les Colonies espagnoles  
exceptées).

Ces pays étant tous ceux dans lesquels  
M<sup>r</sup> Edison a pris des brevets pour les inventions  
ci-dessus d'écrites, le Royaume-Uni de la -  
Grande Bretagne et l'Irlande, le Portugal, la  
Suède et la Norvège ne sont pas compris dans  
cette cession.

De plus, M<sup>r</sup> Edison et la Light Company  
s'engagent pendant cinq ans à partir du  
jour de la signature des présentes à donner  
à la société d'exploitation toutes descriptions  
et tous dessins ou modèles qui pourront être  
nécessaire pour la prise de brevets pour  
toutes inventions ou tous perfectionnements  
dans tous les pays compris dans les  
présentes, de plus à l'expiration des dit cinq  
ans M<sup>r</sup> Edison s'engage d'une manière  
expresse pour douze années de plus et  
sans autre garantie que celle de leur existence  
à fournir tout ce qui pourra être nécessaire  
pour la prise de brevets pour des inventions

faites par lui pendant cette période, lesquels brevets devront, ainsi qu'il sera dit ci-après, être offerts à la société d'exploitation.

Tous ces brevets seront pris au nom de M. Edison, mais les droits de propriété de la société d'exploitation dans les dits brevets seront les mêmes que ceux cédés pour les brevets déjà pris. Tous les frais qui seront faits pour fournir des descriptions, des dessins, ou modèles seront supportés par la société d'exploitation, ainsi que tous droits et frais faits et payés pour la prise de brevets nouveaux à partir d'aujourd'hui.

Tous les brevets déjà pris et formant l'objet des présents apports sociaux seront remis à M. M. Borges et Lion dans les quinze jours de la date de ces présentes, pour être par eux remis à la société d'exploitation. Les brevets resteront entre les mains de la société anonyme et seront à la disposition de M. Edison et de la Light Company pour l'exercice de leur droits spécifiés ci-après. Si cette remise était retardée pour quelque cause que ce soit au-delà du dit délai de quinze jours le terme imparti à M. M. Borges et Lion pour constituer les dites sociétés ne commencera à courir que du jour où la dite remise aura été effectuée et sera réduit à quatre semaines du jour de la dite remise.



De plus M<sup>r</sup> Edison et la Light Company s'engagent, quand ils en seront requis, à donner leur concours pour l'accomplissement des formalités légales nécessaires pour assurer à la société d'exploitation le droit exclusif aux dits brevets déjà pris ou à prendre et qui sont l'objet des présentes conventions.

La Light Company s'interdit d'exploiter directement ou indirectement les inventions de M<sup>r</sup> Edison en tant qu'elles ont rapport à la lumière électrique et à la force motrice dans tous les pays d'Europe où la législation n'admet pas de brevets.

Il est bien entendu que les dits brevets en ce qui concerne tous autres objets que ceux ci-dessus énoncés restent la propriété exclusive de M<sup>r</sup> Edison et de la Light Company, et que la société d'exploitation n'aura la propriété exclusive qu'en ce qui concerne les objets ci-dessus énoncés.

Si les lois de pays autre que la France ne permettent pas la division de la propriété dans les brevets de la manière prévue par ces présentes, M<sup>r</sup> Edison et la Light Company devront transférer à la société d'exploitation le droit exclusif à l'usage de tous ces brevets pour les objets déterminés à l'exposé et à l'art. 2 de ces présentes.

Art 3. La société d'exploitation a pour objet la vente de brevets, la cession de licences,

en un mot, la mise en valeur sous quelque forme, que ce soit des dits brevets etc, aux conditions stipulées ci-après.

Le capital de la dite société sera employé conformément aux décisions du Conseil d'Administration aux expériences, installations, à la publicité etc. qu'il jugera convenable de faire en vue d'atteindre le but qui vient d'être indiqué.

En échange de l'apport de M. Edison et de la Light Company la dite Light Company recevra des parts de fondateurs dans la société d'exploitation lui donnant le droit à 80 p. % de tous les bénéfices réalisés par la dite société, mais sous la réserve suivante.

Tous les bénéfices seront attribués comme suit:

- 1° Au paiement des frais généraux
- 2° A la réserve légale de un vingtième des dits bénéfices.
- 3° Au tantième alloué suivant l'usage au Conseil d'Administration.
- 4° Au remboursement des actions au pair.
- 5° Aux parts de fondateurs et actions de jouissance remplaçant les actions de capital remboursées.

Les bénéfices revenant aux parts de fondateurs et aux actions de jouissance seront répartis dans les proportions suivantes quelle que soit l'augmentation du capital.

Quatre-vingt pour cent aux parts de  
fondateurs.

Vingt pour cent aux actions de jouissance.  
Art. 14:

Dans toute vente ou aliénation de  
brevets ou de droits s'y attachant les droits  
réservés par ces présentes par M<sup>r</sup> Edison et la  
Light Company seront expressément conservés.

La vente totale d'un ou plusieurs brevets  
dans un Etat de l'Europe ou la concession  
de licences pour la totalité d'un de ces Etats,  
ne sera valable qu'avec le consentement  
expressément donné par écrit de la Light  
Company.

Lorsque le prix de vente des brevets  
dans une ville ou une région sera fixé à  
une somme, cette somme sera déterminée  
d'après le nombre d'habitants, ainsi qu'il est  
expliqué au paragraphe suivant.

Il est entendu que, lorsqu'il s'agira  
de concéder le droit d'exploitation pour toute  
une ville ou tout un district par la fourniture  
des courants électriques d'une station commune  
centrale, la société d'exploitation ne devra  
faire cette concession qu'à une société locale  
ayant un capital actions d'au moins deux  
millions de francs pour chaque cent mille  
habitants (ou d'après cette proportion) dans  
le même territoire, et le prix de la cession  
ne devra pas être inférieur à quarante-cinq  
pour cent du dit capital. Les conventions

nécessaires seront en même temps passées pour donner à la société d'exploitation une part égale dans toute accroissement ultérieur du capital de la dite Société locale.

Art 5. La Light Company se réserve le droit d'accepter ou de refuser tout traité dont la société d'exploitation pourrira la réalisation en vertu du dernier paragraphe de l'article précédent et sans cette acceptation, aucun traité ne sera valable, et à cet effet elle devra faire connaître son acceptation ou son refus, soit directement soit par son mandataire à Paris dûment accrédité par elle, et ce dans les quinze jours de la notification qui lui aura été faite du projet de traité par la Société d'exploitation au domicile élu par la Light Company à Paris.

Art 6. Dans le cas où usant de la faculté que lui réserve l'article précédent la Light Company repoussera un projet de traité proposé par la Société d'exploitation, la Light Company sera tenue de trouver preneur dans trois mois de la date de son refus à des conditions plus avantageuses que celles proposées par la Société d'exploitation et de le présenter à l'acceptation de la dite Société. Dans ce cas, la Société d'exploitation aura toujours droit à vingt pour cent des bénéfices résultant de tout traité qui pourrait être conclu par la Light Company. Si au contraire

la Light Company n'arrivant pas dans le  
délai de trois mois à trouver preneur à des  
conditions plus avantageuses la Société  
d'Exploitation aurait droit pour tout  
traité ultérieurement conclu par elle aux  
mêmes fins que lors du premier contrat  
par elle proposé à cinq pour cent des  
bénéfices à titre d'indemnité à forfait  
à payer par la Light Company en dehors  
des vingt pour cent sus-dites.

Art. 7<sup>e</sup> La Société d'Exploitation laquelle  
fera des cessions des dits brevets ou quelques  
uns d'entre eux à d'autres Sociétés d'ex-  
ploitation, devra stipuler, à moins que les  
lois du pays où les dites Sociétés seront  
constituées ne s'y opposent, qu'un tiers  
au moins des membres du Conseil d'Ad-  
ministration dans les dites Sociétés sera  
designé par la Société d'exploitation  
qui s'engage vis-à-vis de la Light  
Company à lui réserver la faculté  
de désigner au moins un administrateur  
pour faire partie du tiers dont la Société  
d'exploitation aura la désignation.

La Société d'exploitation devra se  
réservier droit de contrôler les acquéreurs  
de brevets ou de licences de brevets afin  
qu'ils n'en usent que dans la mesure de  
la concession qui leur aura été accordée.

Art. 8<sup>e</sup> Le nombre des membres du  
Conseil d'Administration de la Société

d'exploitation ne sera pas inférieur à trois. Les administrateurs seront nommés statutairement pour trois ans, et la Light Company aura le droit de désigner letiers des membres statutaires de ce conseil d'administration.

Art. 9°. La Société d'exploitation devra si elle veut procéder à des installations isolées, à des expériences à Paris, obtenir à cet effet l'autorisation de M. Léon ou de ses ayants-droit à qui la Light Company a donné la faculté de former une Société pour l'exploitation des Brevets de la lumière Edison dans Paris et sa banlieue, y compris Versailles, aux termes d'un contrat du date du

La Société d'exploitation devra aussi s'engager, dans le cas où M<sup>rs</sup> Porges et Léon et leurs ayants-droit formeraient une Société pour l'exploitation des Brevets Edison à Paris à rétrocéder à cette Société les installations créées par la Société d'exploitation, et ce au prix coûtant majoré de quinze pour cent à titre de bénéfices.

La Société d'exploitation devra s'engager à prendre à sa charge les frais et honoraires à payer par les deux parties pour les présentes conventions ainsi que les dépenses pour les expériences de la lumière Edison qui seraient faites ~

ultérieurement à l'Opéra de Paris dans le cas où ils ne seraient pas payés par les concessionnaires du droit d'exploitation des brevets dans la Ville de Paris et sa banlieue y compris Versailles.

Art 10<sup>e</sup>. Dans le cas où M<sup>r</sup> Edison ou ses ayants-droit ne constitueraient pas dans un délai de six semaines de la date de ces présentes la Société qu'ils ont la faculté de former pour l'exploitation des Brevets de lumière Edison dans Paris et sa banlieue, y compris Versailles, le droit d'exploiter les dits brevets dans Paris et sa banlieue, y compris Versailles, appartiendrait à la Société d'exploitation et serait régi à tous égards par les conditions des présentes conventions.

M<sup>r</sup> Edison et la Light Company auront le droit d'intervenir avec la Société d'exploitation ou ses ayants-droit dans tous procès en contrefaçon des dits brevets ou dans toute autre instance relative aux mêmes brevets que la Société d'exploitation jugerait nécessaire d'intenter ou qui serait intentée contre elle.

Art 11. Pour toute autre invention nouvelle faite par M<sup>r</sup> Edison pendant la période des douze ans qui suivront les cinq années prévue à l'art 1<sup>er</sup> ou pour tous les brevets pris pour les mêmes inventions dans les pays compris dans

ce traité, M<sup>r</sup> Edison devra offrir à la Société d'exploitation la vente des dits brevets aux mêmes fins et dans la même mesure que pour les brevets actuellement existants.

Dans le cas où M<sup>r</sup> Edison et la Société d'exploitation ne pourraient pas se mettre d'accord sur le prix de cette vente les parties s'engagent d'honneur à le faire déterminer par arbitre.

Art. 12<sup>e</sup> M. M. Porges & Léon s'engagent en même temps, à constituer une Société Anonyme, sous le régime de la loi sus-dite, au capital de quinze cent mille francs dont l'objet sera la fabrication du matériel et des appareils nécessaires à l'exploitation des Brevets sus-énoncés. La dite Société de fabrication créera et remettra à la Light Company, des parts de fondateurs lui donnant droit à cinquante pour cent de ces bénéfices nets et quelle que soit l'augmentation du capital.

La Société d'exploitation autorisera la Société de fabrication à fabriquer en vertu des dits brevets, mais aucune vente ne sera faite dans aucun des pays sus-nommés à aucune personne qui n'aura pas obtenu de licence concédée par la Société d'exploitation.

La Société de fabrication fournira tous les appareils nécessaires à la Société



d'exploitation ou à ses concessionnaires de licence à un bénéfice ne dépassant pas vingt pour cent, et M. Léon s'engage pour lui-même et pour ses mandants en vertu du dit contrat du fin mil huit cent quatre-vingt un, à autoriser la dite Société de fabrication à avoir le siège de son exploitation à Paris.

Les bénéfices de la Société de fabrication seront affectés comme suit:

- 1: Au paiement des frais généraux
- 2: A la réserve légale
- 3: Au paiement de six pour cent d'intérêt sur le capital versé.
- 4: Aux tantièmes d'usage pour les administrateurs.
- 5: Au prélèvement d'un dixième des bénéfices nets pour l'amortissement des actions de capital.

Les bénéfices restant seront partagés comme suit:

- 1: Cinquante pour cent aux parts de fondateurs.
- 2: Cinquante pour cent aux actions de capital.

Art. 13<sup>e</sup> L'autorisation à donner à la Société de fabrication ne sera pas exclusive, mais M. M. Porges et Léon ou la Société d'exploitation, celle-ci en sa qualité de leur concessionnaire pourront organiser ou faire organiser d'autres Sociétés de

fabrication en France ou à l'étranger pour les mêmes objets et aux mêmes conditions mais en réservant, en tous cas, la même proportion dans les bénéfices à la Light Company, et en faisant représenter la dite proportion dans les pays où les lois le permettent par des parts de fondateurs équivalentes à celle dont la loi française autorise la création.

Art 14: M. M. Porges et Reon s'engagent en outre à organiser une autre société pour l'exploitation ou la vente du droit d'exploitation des installations isolées en dehors des installations pour lesquelles la lumière est fournie par un établissement central.

Cette société aura un capital de un million de francs; elle créera et remettra à la Light Company des parts de fondateurs donnant droit à cette dernière à soixante pour cent des bénéfices nets.

Les bénéfices seront affectés:

- 1° Au paiement des frais généraux.
- 2° A la réserve légale de un vingtième des dits bénéfices.
- 3° Aux tantièmes alloués aux administrateurs selon l'usage.
- 4° Au remboursement des actions au pair.
- 5° Tous les bénéfices restant seront répartis comme suit: Soixante pour

cent aux dits parts fondateurs et garantie pour cent aux actions de jouissance.

Le but spécial de cette société sera d'exploiter ou d'autoriser l'exploitation des Brevets dans les villes d'une population de dix mille habitants ou au-dessous, ainsi que toutes installations isolées même dans les villes de plus de dix mille habitants.

Le droit de faire les installations isolées dans les villes quelle que soit leur population cessera quand une station centrale aura été établie dans ces villes par la société d'exploitation, laquelle société ou ses concessionnaires devront alors avoir le droit exclusif dans ces villes à partir du jour de l'établissement de la dite station centrale, sans préjudice des droits acquis jusqu'à ce jour par les concessionnaires de la société des installations isolées.

La société des installations isolées ne cédera en aucun cas les droits d'exploitation en bloc, mais elle en fera toujours l'objet de concessions spéciales à chaque concessionnaire.

La Light Company aura le droit de désigner la moitié des Administrateurs statutaires de la société des installations isolées.

Il est entendu par dérogation aux paragraphes précédents de cet article que

la Société d'exploitation aura le droit d'autoriser l'exploitation de Villes de dix mille habitants ou au-dessous par un établissement central, et elle pourrait céder la totalité de toute ville à une Compagnie locale constituée à cet effet. Les bénéfices réalisés par cette concession appartiendront en totalité à la Société d'exploitation et non pas à la Société des Installations isolées.

Il est bien entendu que cette concession de villes de dix mille habitants et au-dessous ne pourrait jamais avoir lieu excepté pour des villes isolées et séparément, et jamais pour plusieurs villes ensemble.

Art 15. La Société d'exploitation accordera les autorisations nécessaires à la Société des Installations isolées ainsi qu'à la Société de fabrication afin de donner à chacune des dites Sociétés les droits dont elles auront besoin pour user dans les limites des concessions qui leur seront faites de tous brevets déjà pris ou à prendre.

Art 16. Pour l'exécution de ces présentes M. Bozys fait élection de domicile à Paris rue de la Chaussee d'Antin N° 27 et M. Léon à Paris rue Lesneux N° 1.

Et la Light Company et M<sup>r</sup> Boison à Paris 33 Avenue de l'Opéra, avec attribution de juridiction devant les Tribunaux du Département de la Seine.

Fait double à Paris le quinze Novembre

Rangé neuf  
mille mille  
(dans l'original)

mil huit cent quatre-vingt-un en présence  
et de l'agrément de Messieurs G. P. Lowrey  
avocat de New York et de Monsieur Charles  
Batchelor.

Lui et approuvé

(signé) J. F. Bailey

(signé) G. P. Lowrey

Charles Batchelor

Lui et approuvé

(signé) Charles Boyes.

Lui et approuvé

(signé) E. Léon

*The Edison Electric Light Company  
of Europe Limited*

*65 Fifth Avenue New York Nov. 30<sup>th</sup> 1881.*

*Chas. L. Clarke, Esq*

*Dear Sir:*

*Referring to our conversation of a few  
days ago, I beg to return you herewith the sum of  
\$20 which you loaned to this Company September 8<sup>th</sup>,  
being at the rate of \$1<sup>00</sup> for each share of stock held  
by you.*

*Yours truly  
Wm. H. Meadowcroft  
Secy.*

*Mr. Meadowcroft:-*

*I have rec<sup>d</sup>  
the sum of \$20.00  
above mentioned.*

*Yr. truly,  
Chas. L. Clarke*

OFFICE OF  
Edison Machine Works,

104 Goerck Street,

New York, *2<sup>nd</sup> Dec* 188*1*

*S. B. Eaton Esq*  
*Vice President*  
*Edison Electric Light Co*  
*65 Fifth Avenue*

*Dear Sir*

*Please issue the*  
*Debiture Bonds due*  
*us in settlement of our*  
*account in the name of*  
*Samuel Insull & Co*  
*his receipt for same*

*Yours truly*  
*Edison Machine Works*  
*Thos A Edison*

Attended to

59 WALL STREET  
NEW YORK.

Dec 9th 81.

Dear Mr. Druell

Your telegram is received, I  
sold the bonds for you to the same  
man at the same price - you can  
have the money anytime tomorrow.

Very truly  
Yours  
William W. Fiske



Livington Mass 2<sup>nd</sup> 1881

Mr S B Eaton

Vice President Edison

European Co Limited

Salvador D. L.

Wolgate or order

seven thousand dollars

C bond

James H. Banker

2000

Edison Electric Light Co. of Europe, Limited  
Subscriptions to Debenture Bonds received

Date	Name	Amount	Acknowledges	<del>Received</del>
Sept. 8	Charles L. Clarke	20 00	Sept. 8 - 1881	Money returned Nov 30, 1881
10	Earl <sup>W.M.</sup> <del>Wright</del>	14 00	" 10 "	do.
"	Bergmann S.	15 00	" 10 "	do.
12	Newson Co.	25 00	" 13 "	do.
13	F. R. Upton	500 00	" 17 "	Bonds issued
14	C. A. Colby	20 00	" 17 "	Money returned

### Power of Attorney

The undersigned "The Edison Electric Light Company of Europe limited of New York, United States of America" appoints herewith as their attorneys, Messrs. Perget & Moeller, civil engineers of Vienna, Austria, to take obtain the official registration of the assignments of the two patents granted to Mr. Thomas Alva Edison of New York

under date of Mar 5<sup>th</sup> 1881 Ad. N<sup>o</sup> 1121 and 1148/3er. for "Apparatus for the production of electric light and for <sup>and phenomena</sup> means for regulating the currents used therefor" and under date of Mar 5<sup>th</sup> 1881 ad N<sup>o</sup> 1130 and 15591 sv. for "Improvements on the machines and apparatus used for electric lighting"

and to take the necessary steps at the patent office for the prolongation and maintenance of these patents during their whole possible term.

Act of Transfer.

To the undersigned Thomas Alva Edison of New York, United States of North America - two patents have been granted in Austria and Hungary for the term of one year -

under date of Mai 5<sup>th</sup> 1881 with n° 1131 and n° 14873 or for "Apparatus for the production of electric light and for the means used therewith for regulating the current" and under date of Mai 5<sup>th</sup> 1881 with n° 1130 and n° 15391 or for "Improvements on the machines and apparatus used for electric lighting."

The said Thomas Alva Edison <sup>completely</sup> has ceded and transferred ~~on~~ those patents with all rights and privileges, consequently also with the right of obtaining prolongations to the Edison Electric Light Company of Europe, limited of New York, U<sup>n</sup>ited States of America.

The undersigned Thomas Alva Edison gives herewith his consent that this complete transfer of privileges to the Edison Electric Light Company of Europe, limited of New York may be registered officially and marked on the patent papers without further asking his consent.

### Power of Attorney.

The undersigned firm, Edison Electric Light Company of Europe, limited, of New York, United States of North America, nominates herein Messrs. Rogot & Moeller, civil engineers at Vienna, Austria, as their attorneys to see that the official record is made of the transfer of the two patents granted to Mr. Thomas Alva Edison of New York, the 30<sup>th</sup> day of June A.D. 1879 N<sup>o</sup> 2338 & 1504 for "New Methods and Means for the production of electric currents and electric lights" and the 5<sup>th</sup> day of October A.D. 1880 - N<sup>o</sup> 25844 & 29866 for "Improvements in the production of electricity and circuits therefor, and in the translation of electricity into light, heat and power", and to take all the steps necessary at the patent office for the extension and maintenance of these patents during their entire whole possible term.

New York, the

Act of Transfer

I, the undersigned Thomas Alva Edison of New York, United States of North America cede and transfer herewith the two austro-hungarian patents granted to me under the date of June 30<sup>th</sup> A. D. 1879-A. N. 5338 x 1504 for "New Methods and Means for the production of Electric currents and electric Lights" and October 5<sup>th</sup> A. D. 1880-A. N. 25644 x 29666 for "Improvements in the production of electricity and circuits therefor, and in the transmission of Electricity into Light, Heat and Power", to the full and unrestricted possession of the Edison Electric Light Company of Europe, limited, of New York, United States of North America, with all the rights given to me by law as well as with the right to obtain extension for both of these patents.

Herewith I give my consent, that this complete transfer made to the Edison Electric Light Company of Europe, limited of New York, be recorded in the patent office register and that it may be marked officially on the documents.

New York the \_\_\_\_\_

Thomas Alva Edison

to  
The Edison Electric Light  
Company of Europe, Limited.

## Assignment

of  
Letters Patent of France  
Nos 139,588, 139,689, 141,800.

Dated . 1881.

Whereas, I, Thomas Alva Edison, of Mont-  
clair in the State of New Jersey, United  
States of America, have obtained Letters Patent of the Republic  
of France for inventions in or relating to the development of  
electric currents and the application of electricity to the uses of  
lighting, power or heating, being the Letters Patent, and for the  
inventions, more particularly hereinafter described; and  
Whereas The Edison Electric Light Company of Europe, Limited,  
a corporation created and existing under the laws of the State  
of New York, and organized under the law of that State,  
substantially as set out for the organization and regulation  
"of certain business corporations" passed June 21, 1875, and  
having its principal place of business in the City of New York  
in the State of New York, and hereinafter called the Company,  
is desirous of acquiring all my right, title and interest in  
said Letters Patent and in the inventions covered thereby, and  
the exclusive use and benefit of said Letters Patent and  
inventions in and for the Republic of France, and I have  
agreed to sell, assign and convey all my said right, title  
and interest to said Company.  
Now this Indenture Witnesseth, that in consideration  
of One dollar and other valuable considerations to me  
paid by said Company, before the reading and delivery hereof  
and the receipt of which is hereby acknowledged, I, the  
said Thomas Alva Edison, have sold, assigned and  
set over, and by these presents do sell, assign and set over  
to the said corporation, The Edison Electric Light Com-  
pany of Europe, Limited, the Letters Patent of the Republic  
of France, more particularly hereinafter described, and all my  
right, title and interest of every nature therein, and all my  
right, title and interest of every nature in and for the  
Republic of France in all the inventions and improvements

covered and secured by said letters patent, to wit: (1) Letters patent of France numbered 139,588, dated January 3, 1881, for improvements in systems of conductors for the distribution of electricity as a lighting and motive power agent and appliances connected therewith; also (2) Letters patent of France numbered 139,689, dated January 3, 1881, for improvements in means for measuring the amount of electrical current flowing through a circuit; also (3) Letters patent of France numbered 141,800, dated May 27, 1881, for improvements in Magneto or Dynamo Electric machines applicable to both generators and Engines.

The said letters patent and all my right, title and interest so sold, assigned and transferred as aforesaid, to be held and enjoyed by the said The Edison Electric Light Company of Europe, Limited, for its own use and behoof, and for the use and behoof of its successors and assigns, to the full end of the term for which said letters patent were granted, and also for the full term of all and any extensions of any of them, as fully as the same could have been held and enjoyed by me if this assignment had not been made.

And I, the said Thomas Alva Edison, for myself and my legal representatives, do hereby covenant and agree that I and they will, upon request, make, execute and deliver to the said Company, its successors and assigns, all further instruments and agreements necessary for fully transferring or securing to the said Company, its successors and assigns, all the rights, titles and interests hereby sold, assigned and conveyed or intended or agreed to be sold, assigned or conveyed.

In witness whereof, I have hereunto set my hand and seal, this 11th day of May, 1881, in the year One



thousand eight hundred and eighty one.

Signed sealed and delivered  
in the presence of

United States of America  
State of New York  
City and County of New York

ss:-

On this day of One thousand eight hundred and eighty one before me personally appeared Thomas Alva Edison, to me known and known to me to be the individual described in and who executed the foregoing instrument, and he then acknowledged to me that he executed the same and for the uses and purposes therein mentioned.

In testimony whereof I have hereunto set my hand and affixed my official seal this day of  
A. D. 1881.

1881. Electric Light - Edison Electric Light Company of Europe, Ltd. -  
Accounts (D-81-028) [not filmed]

This folder contains accounts, bills, and receipts, many related to the Paris  
Electrical Exhibition.

**1881. Electric Light - Edison Machine Works (D-81-029)**

This folder contains correspondence, agreements, and other documents relating to the formation and operation of the Edison Machine Works, Goerck Street, New York City. Formed in 1881, the Edison Machine Works manufactured dynamos and large electric motors for the Edison electric light system. Included also are the company by-laws and information on the remodeling of the Goerck Street buildings. Some material concerns the relative merits of Porter-Allen and Armington & Sims steam engines as components of the Edison system. There is also a comprehensive financial report, dated November 1, 1881.

Approximately 70 percent of the documents have been filmed. The following categories of documents have not been filmed: correspondence from suppliers of mica; routine bills and receipts.

4 N.Y.  
Babcock & Wilcox  
30 Cortlandt street  
New York

Send the eight inch  
Iron beam as soon  
as possible

T. A. Edison  
10th.

Mealor Bar Jan 10th 1887

J. Cr  
Hm

4 N.Y. ~~Jan 13-1888~~  
Babcock & Wilcox  
30 Cortlandt St  
N.Y.

Your specification  
for seventy five horse  
power accepted, send  
drawings immediately

T. A. Edison

11/10th

To Wm  
4.40 pm

Telegram

Telegram =

Jan 15/81

Southwark Trolley Co  
Philadelphia Pa

When our shaft shipped can find  
no trace of it Edison

11/54 C. J. H.

Edward Hampson

91 Liberty street  
New York.

How is it we do not  
get foundation plans of  
engine from you  
Hurry up with it

T. A. Edison

10/8/81.

Wheeler Park, Jan 19<sup>th</sup> 1881

*Mr. Clark -*  
OFFICE OF  
The Buckeye Engine Company,  
EXPERTS IN STEAM ENGINEERING.

EASTERN AGENCY, <sup>Exclusively for the Sale of the Buckeye Automatic Cut-off</sup>  
Engines, East of the Meridian of Washington, D. C.

Wm. LEE CHURCH, Manager.  
GEO. A. BARRETT, Jr.

ROOM 27, COAL AND IRON EXCHANGE.  
COR. COURTLAND & CHURCH STS.

*Mr. Wm. A. Edison New York, Jan 22 1881*  
*My dear Sir:*

*Dear Sir -* Answering Mr. Clark's inquiry the other day, we can ship the first pair of 14" x 24" Tangye bed Engines in 90 days from date of order, and follow with a pair every two weeks, thereafter until the other four pairs were shipped.

Each pair of Engines to have a band wheel 9 ft. dia x 37" face. to run at 150 Rev. and to develop from 200 to 325 H.P. with boiler pressure ranging from 90 to 125 lbs.

Our proposal f. o. b. can be at New York, with services of men to set up, for the sum of four thousand five hundred and fifty dollars (\$4500) per pair.

*Very Respectfully*  
*Wm. Lee Church*  
*Geo. A. Barrett, Jr.*

*Southwark Mach Co*  
THE  
SOUTHWARK FOUNDRY AND MACHINE COMPANY, *Meas.*

SOLE MAKERS OF

The Porter-Allen High Speed Steam-Engine.

W. H. NEEBICK, Pres. and Treas.  
C. T. PORTER, Vice-President.  
G. A. HORTWICK, Secretary.  
C. B. RICHARDS, Superintendent.

PHILADELPHIA,

*Jan 24<sup>th</sup> 1881*

*T. A. Edison Esq.*

*Dear Sir*

*The bolts to fasten  
the engine bed to sole plate  
have been sent to you to-  
day by Express.*

*A change of foremen  
in the machine depart-  
ment, which took place at  
the time when the parts were  
shipped, will account for the  
oversight in not sending them  
before. Hoping you have  
not suffered inconvenience  
from wanting them.*

*Yours truly*

*C. B. Richards*  
Address all communications to  
The Southwark Foundry and Machine Co.  
40 Washington Ave. Philadelphia, Pa.  
*The other copy of this letter is being  
sent to the*

The Southwark Foundry  
and Machine Co.  
430 Washington Ave.

Philadelphia Pa.  
Hurry up sending bolts and  
heads pins for Engine  
we wrote for last week

T. A. Edison

Meals Park Jan. 25th  
1881

Blank No. 1.

**THE WESTERN UNION TELEGRAPH COMPANY.**

The Company transmits and delivers messages only on condition, limiting its liability, which has been accepted by its subscribers and the public, to the sending station by overnight delivery, and the Company will not hold itself liable for errors or delays in transmission or delivery of telegrams.

The message is an unimportant message and is delivered by request of the sender, under the conditions stated above.

A. B. BRIDGES, Clerk.

NORVIN GREEN, President.

Dated *Phila Jan 25th* 1881

Received at *N.H.*

To *T. A. Edison*

READ THE NOTICE AT THE TOP.

Bolts yesterday  
Heads pins today  
by Express

Southwark Foundry & M. Co.  
7 L.H.

*[Signature]*



Blank No. 1.

# THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS AND DELIVERS messages only on conditions, limiting its liability, which have been assumed by the sender of the communication, and the sender of the communication, and the Company will not be held liable for errors or delays in transmission or delivery of the message.

The message is an UNREPEATED MESSAGE and is delivered by request of the sender, under the conditions stated above.

A. H. BREWSTER, Secy.

NORVIL GREEN, President.

Dated Bureau Depot West-Phil 21 188 1

Received at MT

To J. A. Edison

READ THE NOTICE AT THE TOP.

Am at Depot  
on my way to Mobile  
Park.

C. T. Porter

Spaid 1/25/81

Blank No. 1.

# THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS AND DELIVERS messages only on conditions, limiting its liability, which have been assumed by the sender of the communication, and the sender of the communication, and the Company will not be held liable for errors or delays in transmission or delivery of the message.

A. H. BREWSTER, Secy.

NORVIL GREEN, President.

Dated Phil Feb. 5th 188 1

Received at MT

To J. A. Edison

READ THE NOTICE AT THE TOP.

Full reply in Letter  
to Clark mailed yesterday

S. F. M. Co

8 DH.

Blank No. 1.

# THE WESTERN UNION TELEGRAPH COMPANY.

The Company TRANSMITS and DELIVERS messages only on conditions, limiting its liability, which have been adopted by the shareholders of the Company.  
 It does not assume responsibility for repeating a message back to the sending station for comparison, and the Company will not be liable for errors or omissions in transmission or delivery of messages.  
 The message is an UNREPEATED MESSAGE and is delivered by request of the sender, under no obligation to repeat.  
 A. R. BREWER, Secy. NORVIN GREEN, President.

Dated New York Feb. 5<sup>th</sup> 1881  
 Received at Mt  
 To Chas. A. Edison

READ THE NOTICE AT THE TOP.

Yes, will ship  
 on Monday.  
 E. P. Hampson  
 Special

Blank No. 1.

# THE WESTERN UNION TELEGRAPH COMPANY.

No. <u>154</u>	<p>The Company TRANSMITS and DELIVERS messages only on conditions, limiting its liability, which have been adopted by the shareholders of the Company.          It does not assume responsibility for repeating a message back to the sending station for comparison, and the Company will not be liable for errors or omissions in transmission or delivery of messages.          The message is an UNREPEATED MESSAGE and is delivered by request of the sender, under no obligation to repeat.          A. R. BREWER, Secy. NORVIN GREEN, Pres.</p>	346
Dated, <u>Albany Feb 5</u>	at <u>Western Union Building,</u> BROADWAY AND SIXTH STREET.	
To, <u>Yes Place nyc</u>	<u>Feb 5</u> 188 <u>1</u> .	
by agency		
121 Chambers st nyc		
Small universal June first universal		
guide april first, tool guide		
at once, surface guide June first		
Collect Brown & Sharpe nyc		

READ THE NOTICE AT THE TOP.

**THE AMERICAN UNION**  
**TELEGRAPH COMPANY** is not to be liable for damages arising from any failure to transmit or deliver, or from any error in the transmission or delivery of, its correspondence telegrams, beyond the amount received for sending the same. But in case of error, or in case of delay, the company will repeat back any telegram, for an extra payment of one-half the regular rate, and in that case it is not to be liable for damages, beyond fifty times the amount received for sending and repeating the telegram.



**THE AMERICAN UNION**  
**TELEGRAPH COMPANY** is not to be liable in any case for damages, unless the same be claimed, in writing, within sixty days after the receipt of the telegram for transmission. And this company is not to be liable for the act or omission of any other company, but it will endeavor to forward this telegram over the lines of any other telegraph company, necessary to reaching its destination, but only as the agent of the sender and without liability therefor.

LESSEE OF THE DOMINION TELEGRAPH CO. OF CANADA, AND CONNECTING WITH THE FRENCH ATLANTIC CABLE.

Wire No. <i>63</i>	Sent by <i>BB</i>	Class <i>7 Ad 15</i>
Delivery No.	Sh'd by <i>W</i>	Time <i>7.32</i>

This telegram has been received at *WEST 14th STREET, NEW YORK AVENUE.*

Date *Menlo Park N.J. 17* *July 17* upon the above conditions.

*Bacon*  
*65 - 5 Ave*

*Dean will be ready to*  
*Test tonight*  
*Johnston*  
*OK*

[Form 10.]

T. A. EDISON,

Menlo Park, N. J. *Febr 19<sup>th</sup>* 1880.

*Southworth's foundry*  
*Philadelphia Pa*  
*430 Washington Ave Philadelphia*

*We are ready to run*  
*Engine on Monday.*  
*Tell Mr. Porter not to delay us.*  
*Is the lead shipped?*

*19th.* *T. A. Edison*

# The Southwark Foundry and Machine Company,

Sole Makers of

The Porter-Allen High Speed Steam-Engine.

W. H. MERRICK, President.  
C. T. PORTER, Vice-President.  
G. A. BOSTWICK, Secretary.  
C. B. RICHARDS, Superintendent.

PHILADELPHIA

Feb 19 1881

*Oct 1880 & 1881*

*F. A. Edison  
Sfr*

*Telegraphed and mail  
4th*

*File*

*Eng. Works*

*We are in receipt of your telegram from you this morning that we are quite at a loss to understand.*

*The man had to come away from your place leaving his work unfinished because you could not let him have the shaft with which to erect the engine - we are so understand that you are ready for him to complete the job - if so give us Monday morning.*

*The lead ought to have been at your station ten days ago - it was shipped by H & B Taylor Co on the 7th*

*Very truly*

SOUTHWARK FOUNDRY & MACHINE CO.

*W. H. Merrick*

Pres't

T. A. EDISON,

No 1

Menlo Park, N. J.,

Feb 22<sup>nd</sup>, 1880.

One Brown & Sharp complete with  
arbors and butters

Width	in	Size
2 of $\frac{1}{4}$		2 $\frac{1}{2}$
" $\frac{3}{8}$		2 $\frac{1}{2}$
" $\frac{1}{2}$		2 $\frac{3}{4}$
" $\frac{7}{8}$		2 $\frac{7}{8}$
2 1		2 $\frac{1}{2}$

Grooving butters

No 1, 2, 3, 4, 5, 6

Angular butters

Right Left angle 60°

One complete set of saws  
for same work.

Collars and arbors for same

2 Putnam Engine Lathes

14" swing. Fitchburg

one Pratt & Whitney Engine Lathe

with taper attachment and one

12" Horton Chuck improved

T. A. EDISON,

No 2

Menlo Park, N. J.,

1880.

2 Stevens Dies with taper  
attachment, and 6 Common  
One Blacet single spindle  
drill press medium size with  
bollets and chuck and drills  
to fit, size <sup>of drills</sup> from  $\frac{1}{4}$  to  $\frac{1}{2}$  size  
64 "

one Large Putnam Lathe  
with compound rest 16 foot  
by 32 " swing, as near as  
possible

One 6 foot Planer, Pat L.  
Witney with improved chuck  
and centers

One Pat. L. Witney shaper  
finch stroke with improved  
chuck

One Brown & Sharp Universal  
grinding Mach. Complete  
with 3 grades of emery wheels  
and diamond tool for turning  
the same.

T. A. EDISON,

No 3

Menlo Park, N. J., 1880.

2 adjustable wood Hogns. and  
wood saw

One Surface grinding Mash.  
Complete. Brown & Sharps

One. Brown & Sharps Tool  
grinding Mash. for grinding  
cutters. mills. &c.

One Speed Lathe.

One Stewart Lathe with slide rest

One grindstone

One Keystone Portable

Forge. with Anvill. one

6 lb. one sledge. one 2 lb. Hammer

One Bench shears

One Hand "

One Horton Chuck 4"

One " " 9" to fit

Putnam Lathes

2 Almond drill Chucks no. 2

Westrolls Patent Combination

Chuck. 4" 3 jaws for

speed Lathes

T. A. EDISON,

No 4

Menlo Park, N. J.,

1880.

One set of standard reamers  
from  $\frac{1}{4}$ " to 2"

One set of Lathe Chuck drills  
for standard reamers from  $\frac{1}{4}$ "  
to 2"

One set of shell reamers from  $\frac{1}{4}$ "  
to 3" varying  $\frac{1}{16}$ "

One set of Rose Chucking reamers  
from  $\frac{1}{4}$ " to 2" varying  $\frac{1}{16}$ "

One set of Taper Reamers for  
Morse drill sockets No. 1, 2, 3, 4, 5

One set of steel arbors  
to suit reamers

2 set of twist drill supplied  
to wire gauge

One set of taps from  $\frac{1}{4}$ " to

One inch with adjustable  
Wrenches

One set of Lathe dogs

One improved thiner caliper  
Cinch Compass with standard  
for testing accurate adjustment



T. A. EDISON,  
No 5-

Menlo Park, N. J.,

1880.

One patent Hardened Tug Squares  
3" and 12"

One Large Micrometer caliper

One 24" and 12" scale

2 Hardened straight edges 6" 12"

One standard Thread gauge

One Worm Thread gauge

One Wire gauge American  
" " " English

One twist drill wire gauge

One Hack saw Frame and

Complete set of saws

One set of Stub resamers

One assorted set of probes

Files and Handels and

Common files

One Revolving Sapper Lap

" " Lead "

" " Emery "

One Bench Sapper "

" " Lead "

" " Emery "

T. A. EDISON,

No 6

Menlo Park, N. J., 1880.

One set of Rods and Head and  
Counters. X

Cut stones Different sizes

One set of letters and  
figures X

3. No 1 Hide Face Hammers

3 screw wrenches and no 6, 8, 10.

Belt and Belt Pinch X

One set of scrapers

Steel for Lath. Planer.  
and gauges

there is some tools that X  
we will be compelled to make  
your

C. L. Dean

Very  
Respectfully

Telegram

S. A. Edison

65 Fifth Ave.

New York.

Porter's man  
<sup>probably</sup> will not be  
ready tonight.

S. A. Edison

N. Y.

Sent 2.50 P.M.

Feb 24/81

2.9.90  
Arabia  
+ Machinery

I

DI, Liberty St.,

New York, Feb. 1881.

Be it known that I, Edward P. Hampson, do agree to deliver in New York City, to the order of the ~~Edison Electric Light Co.~~ <sup>Thos A Edison</sup> three automatic cut-off engines, and boilers complete with pulleys, fly-wheels, steam gauges, and all necessary parts, all constructed from the best materials and in the most thorough and workmanlike manner and in perfect running order.

The engines shall be constructed and governor set and reciprocating parts balanced so as to maintain a speed of 410 revolutions per minute, with perfect safety and economy, and without affecting the durability of the engines. At 410 revolutions, with a boiler pressure of 75 lbs. per sq. inch, the engines shall develop no less than eight effective horsepower, and when developing said power, the total energy developed shall not exceed ten indicated horse power.

The main pulley on engine shaft shall be of a diameter to give 1210 revolutions per minute to the dynamo-pulley of 9 1/2 inches diameter, the action being direct by belt from pulley on engine shaft to pulley on dynamo-shaft. The pulley shall be of a width necessary to a five inch belt.

The boiler shall be of the horizontal return-tube type, of ample size, with heating and grate surface all in due proportion to supply steam necessary to the continuous development of ten indicated horse power, in the engines before mentioned, and this to be attained when straw has to be used as fuel.

The boilers thoroughly lagged, shall be able to withstand a steam pressure of 150 lbs. to the sq. inch, with perfect safety.

The engine shall be mounted upon the boiler and bolted to lugs which are permanently fastened to said boiler.

I also agree to furnish duplicates of such parts of the engines as are most liable to breakage or which may need renewing.

The boiler shall be permanently mounted on skids of a strong and durable nature, so that said boiler can with little trouble be moved about or transported. The engines shall be separately packed for transportation in strong iron bound boxes, as also the parts which are separately transported.

I agree to deliver said engines and boiler, as heretofore mentioned, on or before the 20th day of March, 1881.

Within three days of the delivery, I agree to have one engine and boiler erected in a suitable building in New York City, south of Chambers St., with smoke stack and exhaust pipe leading to the outside, and in perfect order to test the efficiency of the plant in connection with the Edison system of Electric Lighting;— said test to take place at the pleasure of the <sup>J. A. Edison</sup> Edison Electric

~~Lighting Co.~~

The expense of preparing this plant for the test, and conducting of same and rental of necessary space, shall be born by ~~the Edison Electric Light Co.~~ <sup>J. A. Edison</sup>

I agree to abide by the decision of C. L. Clarke, engineer of said Co., as to whether the work has been constructed as here-

tofore mentioned, and as to its satisfactory performance, by actual test, in respect of indicated power developed, available power, and speed.

If engines and boilers are not delivered on or before the 29th day of March, 1881, I agree to forfeit three percent on the

original price for each day of delay from March 29th, 1881, until the day of delivery.— Provided nevertheless, that the delay is not caused by accident while said engines and boilers are in the hands of the public carriers transporting the same.

*Thomas A. Edison*  
~~The Edison Electric Light Co.~~ agrees, provided the before mentioned agreements and proposals are executed in the aforesaid manner, and to the satisfaction of C. L. Clarke as before mentioned, to pay to Edward P. Hampson the sum of twenty-seven hundred and

seventy-five dollars, (\$2,775.00), said payment to be made within thirty days after the delivery of the engines and boilers. If the test is not conducted within this time, the engines shall be considered as satisfactory in respect to power and speed, and the above payment shall be made, provided, nevertheless, that the mechanical construction is approved as above mentioned.

The parties before mentioned do agree to abide by the articles of this contract, and to fulfil faithfully their respective parts as heretofore mentioned— E. P. Hampson, by his signature, *Thomas A. Edison, by his signature*.  
~~Thomas A. Edison, by the signature of its President and affixing its corporate seal.~~

Witness:

*Thomas A. Edison*  
*Edward P. Hampson*

[CA. FEBRUARY 1881]

Geo Place  
Can furnish you a  
~~new Haven~~  
~~Whitecomb~~ planer -  
found right off  
~~7 to 8 weeks~~ 6 foot  
26 inches wide

Blaisdell lathe.  
B 13 inch swing  
6 foot bed - with  
Pratt W patent, laper  
attachment in  
7 weeks - ordered  
#415 Geo Place

Geo Place

Can furnish Brown & Sharpe

Universal in 10 weeks =  
ordered it =

Can furnish within 2 or 3  
weeks 2 x 16 inch 6 foot  
wood light lathe = wood light  
bought them 700 for the two  
Hobson

Jap. attachment Lathe with  
Pr Whitney attachment but  
not Lathe = 8 or 10 weeks  
25 a plain lathe = OK Dean order  
\$415

Small size Henry Shaper  
15 inch stroke = its light  
machine, Vise goes with  
inch Center Extra - get  
in many - Can furnish  
this self it immediately  
\$325. Deano see it = 90 weeks

Universal grinding machine  
3 weeks - OK ordered

Tool Grinding Machine - 110 Got it,  
Right off

Surface grinding machine -  
10 weeks \$600 - ordered

Drill, will lend a small  
drill for term - Reg drill  
made by British Woodcut, 175  
delivered in 3 weeks =  
its wood light to hands

~~Can get~~

Robinson Lathe 32 inch 16 foot  
makes same as ours at moment  
7 to 8 weeks \$12.00  
ordered

15000 inches

Can let us have a  
speed lathe.

355

\$60. Check for planer Dean order  
50 Centers =



Tools Required

2-14 lb. Hammers	
2- 8 " " "	} 207
2- 5 " " "	
2- Crowbars	} 84
1- Driving bar	
2- 6 in Flat Chisels	104
2- 12 " " "	} 207
2- 18 " " "	
2- 24 " " "	
1 Metallic Tape line	50ft
	275

OFFICE OF THE  
EDISON ELECTRIC LIGHT CO.  
65 5th AVE.,  
NEW YORK.

32 Swing 16 ft bed —  
2 Lathe Patm. 14 in swing. 6 feet bed.

Shaping machine,

✓ 6 foot planer - Pratt Whitney,

Single spindle drill, Blandall,

(Stewarts <sup>speed</sup> Lathe with slide rest) =  
Keeps in Centre ft.  
~~24 ft~~ 12 inch Swing Steam 125 <sup>25</sup> ft.  
2 joints

Empire Coffey  
in Bridge St  
water feet Boston  
and in the St. m.  
Place in Harbor

machinery

new of 1828

3 in. wks

E. P. Bullard,

Dealer in Machinery,

14 Day Street.

New York, March 1891

Edison Electric Light Co

65, 5<sup>th</sup> Ave N. Y.

Gentlemen

In reply to inquiry for tools  
We say we can furnish for immediate  
delivery

One Amer Engine Lathe 30" S. 16' Bed Rk  
Lead, Saw Cutting, Compd Rest, Cross  
Feed & New Bed on Rock N. Y. \$1250.  
Cross Pulley & change for 3/4" Bed Smallest 7"  
Largest 16" dia

One B & S. Fore Grinding, Int for Grinding, Cutter  
with Counter complete on Rock \$125.

One Speed Lathe Openers 11" x 52" New \$15.

One " " Handey Make 12" x 5" " 110.

One 9" 3 Jaw Room Chuck \$3. 1/2 @ 25% 25.50

We can deliver in April

Two Amer Engine Lathe 20" S. 10' Bed Comp  
Rest & Cross Bed Friction Feed Splines  
Screw Complete For \$4650 each less

E. P. Bullard,

2

Dealer in Machinery,  
E. Electric L<sup>o</sup>

14 Beay Street.

New York, \_\_\_\_\_ 1888

One 12" Sweetland Chuck  $\frac{1}{2}$  Jan 111 Sept 1870 = 37.40

Two Seven Vices List Sept 15%

Six Practice Vices List " 15%

One Hendey Mch Co Planer To please 24' x 6'  
delivery in about six weeks \$700. on book

One Road whetting 10" Shaper cant spiff  
delivery now 470. on book

Two Brown Sharp Vm. Grinding Tools 800. on "

Can't spiff List of delivery now

One R. & S. Buffum Grinding Tools Small 300. on book  
Large size 600. " "

Can't spiff List of delivery now

Grinding Linn & Forge can finish probably  
at once.

Shall be pleased to receive your order

Yours Truly  
E. P. Bullard

Harrison

OFFICE OF  
JOHN SMITH,  
BUILDER,  
307 WEST 36TH STREET,

New York, March 4<sup>th</sup> 1881  
J. O. Russell Esq  
I propose to do  
flooring at 104 Greenwich St  
the 1<sup>st</sup> floor floor in  
Grounds room floor floor  
next room floor on  
rooms next also small  
rooms on first floor  
2 Large rooms on  
2<sup>nd</sup> floor 3<sup>rd</sup> floor  
all flooring to be good  
sound floor 2x4 in tongued  
grooved and blind nailed  
Sleepers Chestnut 14 inches  
from Center line  
Complate 2 half spars  
and Close up 2 others  
over

all to be done  
in a good Northwesterly  
Monroe. for the  
Sum of fifteen  
hundred and fifty  
five Dollars \$1565-

Yours John Smith  
307 W 36

50.

Contractor Building

35<sup>th</sup> & 3<sup>rd</sup> St

New York

March 4/81

all, can be done  
in 2 days = 3<sup>rd</sup> floor in  
Edison E. L. Co. Will Seasoned  
as can be got in  
Santo Moonlee

I propose to furnish and lay 2x4<sup>in</sup>  
tongued and grooved Spruce plank  
to cover 1 Room 17x17 ft on beams <sup>new</sup> in

5 Rooms 44x38 on beams in

1 Room 44x38 on chest Sleepers 14<sup>in</sup>

from center to be furnished and put in  
place by me

1 Room 9x60 on sleepers lay as  
above - all well nailed with 20<sup>th</sup> nails  
make four (4) Hatch doors in two  
part covered on the under side with 1x

9<sup>in</sup> Pine Boards, new hinges hinges re

The whole to be finished in a complete  
and workmanlike manner for the  
sum of one thousand five hundred  
and ninety one dollars

\$1,591.00

Respectfully R. H. Casey  
 Carpenter



[ATTACHMENT]

Mr Edison

I rec'd your letter this  
am. and have started to  
get material - ready

R. H. Bassett

File  
140

Brooklyn, C. D., March 16, 1881

To Mr. Thomas Edison, Principal of the Electric Light Co.

To ~~CHAS. H. WALKER~~ Dr.**Carpenters & Builders,**

Bet. Lee &amp; Bedford Aves.

219 CLYMER STREET.

Mr. Edison Sir We the undersigned do agree to do the  
 Carpenterwork in the Storage works Building, furnish  
 material for the same as follows - To Take up Old  
 floor in Third Story and lay New the plank to be  
 one inch and a quarter thick - Take up Old floor in 2<sup>nd</sup>  
 Story and lay floor the plank to be 2 inches thick  
 Gully Floors three inches thick with Chestnut Sleepers  
 in Free Foundry Transoms - The Transoms over the  
 Office to be two inch plank all material to be  
 New one of the best Spruce and Chestnut for the sum  
 five thousand & seventy one and ten cents 5071.10  
 To be done in a thorough and workmanlike  
 We will do it by Days work if weather

Respectfully Yours Chase &amp; Walsh

New York 188

No.

JOBING

Promptly attended to.

To JOHN C. WESSELLS, Dr.  
CARPENTER AND BUILDER,

188 WEST 28th STREET, bet. 6th &amp; 7th Aves.

Third Floor

I Propose to take up & remove the old floor in two Parts of Building of the Stein man Works in Ganauk St. 25 shown on third floor and lay a new floor of 1 1/2" by 4 or 4 1/2" spaced 16" on edge & grooved plank well nailed to every beam.

Second Floor

Also to take up on second floor the old floor in the two Parts shown under the same Parts in third story and lay a new floor of two in 2" by 4 or 4 1/2" in thickness & grooved spaced plank well nailed to every beam.

First Story

Also to take up the old floor from beams in First Story West the small space back of West end Office 15 x 19 ft. and the space on East adjoining about 35 x 40 ft. and lay a new floor on same beams of 2 in two inch thickness and grooved spaced floor plank well nailed with proper size Nails to every beam.

Also in space adjoining about 30 x 40 ft. where there is no floor also in large space on South End of Building about 35 x 40 ft. to lay well bedded and set in Chestnut Sleepers 14 in from Center and on them lay a new floor of 2 in two in by 4 or 4 1/2" in thickness and grooved spaced floor plank spaced well nailed to every sleeper.

The Work all done in the most Substantial manner and with promptness.

JOHN C. WESSELLS.

CARPENTER AND BUILDER,

136 West 28th Street,

BET. 6TH AND 7TH AVENUES.

New York, March 26 1887

The Edison Electric Light Co

I Purpose to Complete  
 the Carpenters Work as Specified  
 in a Complete & Satisfactory Manner  
 for Sixteen Hundred and Seventy  
 Three Dollars

\$1673.00      Right Yours  
 John C. Wessells

New York March 4, 1881

To the Edison Electric Light Co.

Sir

We propose and agree to furnish  
 Materials and Labor for Whitewashing in  
 in Building in Brick St. as follows  
 Clean all glass front and Rear  
 Whitewash Walls and Ceilings of Rooms  
 Shown By Mr Russell

The Work to be completed in to the  
 Satisfaction of the Superintendent  
 For the sum of (seven hundred and fifty)  
 (750.00)

Respectfully  
 Murray Bros.

610 6th Ave

P. MURRAY,

(Established 1869.)

House, Sign and Decorative Painter,

107 WEST 26th STREET, near 6th Avenue.

New York, March 17<sup>th</sup> 1887

Edison Electric Light Co.

65-2<sup>nd</sup> St

I propose to whitewash the inside of the  
6 boats, of all the rooms on 1<sup>st</sup> & 2<sup>nd</sup> Sts.  
Stops, Glass door walls on East of  
Goerck St. Put plaster & throught  
its & wash of all the teachers shop  
of large room & paint it & boats  
white, all to well done for the  
for the sum of \$100.00

Murray

(40)

OFFICE OF THE  
EDISON ELECTRIC LIGHT CO.  
65 5th AVE.  
NEW YORK.

P Murray Is to have the job of voluntarily  
write him to that effect

Rt Casey - 35 W 30th St Is to have the  
flaming Contract = write him he is to  
have it & to go right ahead getting  
material ready

Order Amos 18" 32" long 16 long (\$125.00) new



JOHN DUKE,  
Carpenter and Builder,

737 East 9th Street,

NEAR AVE. D.

New York, March 7 1881

Mr Edison

Dear Sir I will  
agree to furnish Labor & material.  
As follows Viz 3<sup>rd</sup> planed tongue  
& Grooved spruce flooring planks about  
8<sup>in</sup> wide laid on stout chestnut  
sleepers laid 18<sup>in</sup> to center with all  
Labor, Nails & etc <sup>to be</sup> completely  
finished in a good workmanship  
& substantial manner for the sum  
of 10 1/2 cents per sq foot Surface Measure  
The 1<sup>st</sup> & 1/2 spruce flooring worked  
& laid as above specified will cost  
6 1/2 cents per sq foot Surface Measure  
The 1<sup>st</sup> spruce flooring all complete as  
above specified will cost 4 1/2 cents  
Per sq foot Surface Measure  
(Note no sleepers included with the 1<sup>st</sup> & 1/2  
spruce flooring) Respectfully Yours John Duke  
Builder 737 East 9<sup>th</sup> St



**THE WESTERN UNION TELEGRAPH COMPANY**

The Company, UNINTRA and UNIMAGNET, assumes only on conditions, limiting its liability, which have been set forth in the following passage:

UNINTRA and UNIMAGNET are not liable for any damage or loss resulting from the use of the equipment, or for any errors or delays in transmission or delivery of messages.

The Company, UNINTRA and UNIMAGNET is delivered by request of the sender and

NORVIN GREEN, President.

Dated Theravada Park N. K. S. 188

Received at 791 BROADWAY. *Mich*

7. Q. A. E. Lind

65 - 5th Ave

Want three or four men  
 & the Engine all night on  
 that work bearing Can I  
 have them answer

19p g L Dean

THIS TELEGRAM HAS JUST BEEN RECEIVED AT THE OFFICE IN

791 BROADWAY, near Tenth Street.

WHERE ANY REPLY SHOULD BE SENT

**Direct Wages**

File 02  
THE  
SOUTHWARK FOUNDRY AND MACHINE COMPANY,  
SOLE MAKERS OF  
The Porter-Allen High Speed Steam-Engine.

W. H. MERRICK, Pres. and Treas.  
G. T. PORTER, Vice-President,  
G. A. BOSTWICK, Secretary,  
C. B. RICHARDS, Superintendent.

PHILADELPHIA, *March 16*, 1881

J. A. Edison Esq.

Dear Sir:

Your telegram of  
the 15<sup>th</sup> ordering 2 Castings  
each for Surface plates  
and Straight-edges is recd.  
And the Castings shall be  
sent you as soon as they  
can be made -

Yours truly

C. B. Richards.

Machinists' Tools  
AND  
**MACHINERY**  
OF EVERY DESCRIPTION.

**-PATENT-**  
Cold Rolled Shafting,  
Couplings, Pulleys,  
**SELF OILING HANGERS**  
Tanto Emery Wheels & Mach'y.

Belting, &c.

P. O. Box 4469

Established 1855.

OFFICE OF

# The George Place Machinery Agency,

121 CHAMBERS & 103 READE STREETS.

New York, *Mar 16 1887*

*Thos A Edison Esq*

*New York City*

*Dear Sir*

*Wm Brckett & M. Dowell*  
*whose works are at Arlington N.Y.*  
*have their N.Y. office at Coal &*  
*Iron Exchange Building - Cortlandt St.*  
*I understand are building a rather*  
*fast running Engine something after*  
*the Porter style, perhaps you had*  
*better see them.*

*Yours truly*

*H. M. Liver*

OFFICE OF  
*The Singer Manufacturing Company*  
No 34 Union Square,

New York, March 15<sup>th</sup> 1881

Mr Tho<sup>s</sup> N. Edison  
Mento Park N<sup>y</sup>  
Dear Sir

An order has been received at our factory  
at Elizabethport N<sup>y</sup>, requesting us to deliver to you  
at 104 Gossett St, this city, 'S<sup>t</sup> Mark Bench Leg<sup>s</sup>!'  
said order appears to us rather informal, and  
we therefore request you to confirm same, also  
inform us if the goods are to be charged to your  
account, or if you desired the loan of the same.  
We have now standing on our books an amount  
to your debit, as per enclosed bill \$632<sup>50</sup>.

Yours truly  
The Singer Mfg Co  
Per E. Hardenburgh

W 7 e ~

Blank No. 1.

## THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on condition, limiting its liability, which have been accepted and agreed upon by the sender of the following message.

This message is an UNREPEATED MESSAGE and is delivered by request of the sender, under the conditions herein shown.

A. B. BREWSTER, Secy.

HOWYIN GREEN, President.

Dated Phila Mar 8/98 188/

Received at M.H.

To M. Edison Manager

READ THE NOTICE AT THE TOP.

Can't leave this  
morning go on and  
bed shift and run  
without putting any  
current through till  
I get there tomorrow  
morning

C. T. Porter

23 paid.

Nov. 1891

## By-Laws

Railway Telegraph & Telephone Company  
 Eastern District Works

## Article I

## Office of Business

The principal <sup>office</sup> and place of business  
 of the Company shall be at No. 65  
 5<sup>th</sup> ~~St~~ ~~Street~~ in the  
 City of New York.

## Article II

## Meetings of Stockholders -

Sec. 1. There shall be an annual  
 meeting of stockholders, held at the  
 office of the Company on the  
 first ~~Tuesday~~ <sup>Tuesday</sup> of February in each  
 and every year, and due notice  
 of such meeting shall be given  
 as the Board directs, and written  
 notice thereof, which be sent to  
 each stockholder at his last  
 known place of residence.

Sec. 2. Special meetings of the  
 stockholders may be held at any  
 time by order of the President or  
 resolution of the Board of Directors  
 after ten days notice is coming.

to the stockholders mailed to them  
at their last known residence

### Article III Votes and Proxies

At any meeting of stockholders,  
each share of stock shall be  
entitled to count one vote,  
but such vote can only be  
given by a shareholder in person  
or in case of his absence by a  
written proxy given to, and in the  
hands of a stockholder

### Article IV Trustees

Sec 1 - There shall be <sup>three</sup> ~~three~~  
trustees, who shall be elected  
at the annual meeting of the  
stockholders on the first Tues-  
day of February in each and  
every year

Sec 2 - In case of vacancy by  
death, resignation or disquali-  
fication, the vacancy shall be  
filled by the stockholders at a  
special meeting to be called

for that purpose

Sec 3- The trustees shall hold office for one year from the date of their election, but in case of the failure or omission to hold any election, they shall hold over and continue in office until their successors are elected.

Sec 4- No person shall be elected a trustee, unless he owns at least one share of the Capital Stock of the Company.

Sec 5. Regular meetings of the Board of Trustees shall be held at the Office of the Company ~~on the~~ on the first, Mondays of ~~June~~ February, May, August, & November in each and every year.

Sec 6- Special Meetings may be called at any time by the Board or any two of the Trustees, written or personal notice of the time and place of such special meetings must be given to each trustee at least one day prior thereto.

Article V  
Officers



The Board of Directors shall immediately upon their organization elect by ballot a President, Secretary  
<sup>or other named officers</sup> and a Treasurer ~~and~~ <sup>and</sup> a Manager

## Article VI

### Term of Office

Sec 1 - The President, Secretary, Treasurer and Manager shall be elected annually by the stockholders at their annual meeting and may be removed at any time by a majority in interest of the stockholders at any meeting thereof.

Sec 2 - In case of death, resignation or removal from office of any of the officers of the Company the stockholders shall forthwith elect a successor, who shall hold office for the unexpired term of such officer.

Sec 3 - In case of ~~the neglect~~ <sup>failure</sup> of the stockholders to elect officers at the time prescribed in Article VI of these By Laws, the officers previously elected shall hold

over and continue in office until  
an election is held

### Article VII

#### Duty of President

It shall be the duty of the President  
to preside at all meetings of the  
Stockholders and Board of Trustees  
to sign all certificates of stock  
of the Company, and to do and  
perform all acts incident to his  
office, and such as may be  
assigned him by the Board of  
Trustees

### Article VIII

#### Of the Secretary & Treasurer

The office of Secretary and Treasurer  
shall be filled by the same  
person.

Sec 1 - The Secretary shall  
keep the minutes of the Board  
of Trustees in proper books  
provided for that purpose,  
and all the records and papers  
of said Board; he shall also  
keep the minutes of all meetings  
of the Stockholders. He shall  
have the care and custody of the

Deal, Stock and transfer books  
of the Company and shall attend  
to the giving and serving of all  
Notices of the Company, And  
shall do and perform such  
other acts and duties, as may  
be assigned to him by the President.

Sec 2 - The Treasurer shall have  
the care and custody of the books  
of account, and of all the funds  
of the Company and shall deposit  
all moneys in such bank or banks  
as the Trustees may designate  
and shall deposit all checks and  
in the regular course of business.  
The Bank account shall be kept  
in the name of the Company, and  
the treasurer shall make a statement  
of his cash account at each regu-  
lar meeting of the Board of Trustees,  
and shall at all times exhibit  
his bank books and books of  
account to any trustee upon  
application at the office  
during ordinary business hours.  
He shall also perform such  
other duties as may be assigned  
him by the President.

Either he or

The President

### Article IX

Of the Manager.

The Manager shall have general control and management of the business of the Company and shall devote his entire time thereto. He shall perform the duties usually incident to his position, and such other duties as may be assigned him by the President.

### Article X

Other Officers

The <sup>Stockholders</sup> ~~Board of Directors~~ shall appoint such other Officers, employees and Agents, as they shall deem best, and shall fix the salaries of all of the Officers of the Company.

### Article XI

Debts and their Contracting

No debt or liability beyond the necessary legitimate business and current expenses of the Company shall be contracted without the consent of the President, and no note or

notes shall be given without  
the consent of the President

## Article XII

Stock & the transfer thereof.

Sec. 1. Each stockholder of  
the Company shall have a  
certificate or certificates  
of stock, signed by the President  
and Secretary, and stamped  
with the Corporate Seal,  
stating the number of shares  
owned by said stockholders.

Sec 2 - Such stock shall be  
transferable on the books of  
the Company by the holder  
thereof in person or by power  
of attorney, and upon surrender  
of the certificate so transferred.

## Article XIII

Dividends

Dividends of the net profits  
in hand shall be declared  
and paid as often, and at such  
times as the trustees may elect.

Article XIV

Seal

A Suitable Seal shall be provided, and the affixing of the seal to contracts and instruments, together with the signatures of the President and Treasurer, shall bind the Company

Article XV

Amendments -

The foregoing By-Laws may be altered, amended or added to at any meeting of the <sup>Trustees</sup> ~~Stockholders~~ by a majority in interest of the stock vote of all the Trustees



Blank No. 1.

**THE WESTERN UNION TELEGRAPH COMPANY.**

This Company transmits all messages only as received, making no liability, which has been assumed by the sender of the message. The Company is not responsible for any loss or damage to property or for any injury to persons caused by the use of the telegraph. The Company is not responsible for any loss or damage to property or for any injury to persons caused by the use of the telegraph. The Company is not responsible for any loss or damage to property or for any injury to persons caused by the use of the telegraph.

A. H. BREWER, Clerk.

NORVIN GREEN, President.

Date 195 May 5 1887

Received at 791 BROADWAY, N.Y.C.

To J. Edison

READ THE NOTICE AT THE TOP.

will be up soon after  
Eleven with Engineer & sent  
of Bicketts engine it looks  
well H. G. H. Fair,  
16 p.m.

THIS TELEGRAM HAS JUST BEEN RECEIVED AT THE OFFICE IN

**791 BROADWAY, near Tenth Street,**

WHERE ANY REPLY SHOULD BE SENT.

Direct Wires.

Edison Machine Works,

104 Goerck Street,

New York Apr 6 1887

Thos. A. Edison Esq  
65 5th Ave

Dear Sir:-

Please send me some  
more prints. I want them bad.

Yours  
H. L. Davis  
Supt



450 -

April 7

Armington Sims -

proceed to build one standard  
Dynamo <sup>2hp</sup> 125-hp. 120 lbs. steam

with 50 hp power <sup>350 per</sup> following  
later in stroke, will have it  
done in 6 weeks from today -

~~per~~ Engine will <sup>cost</sup> \$2000, inclusive of everything

If this Eng is satisfactory, will  
give order for 24 - if price is  
satisfactory ~~at~~ time ~~X~~ wants \$6000  
advance on the 24 = Edison is to have

the privilege of making all the  
engines he wants that ATS  
can make - <sup>within time</sup> Don't want any  
more advance after furnish the 24

Can pull along after that =  
wants all the work we have that they can do

Edison Machine  
works-Staff  
Contract

Ammington Line  
Apr 7 1886

Edison, George, Pres.  
S. B. Eaton, Secy.  
J. J. Van Nostrand,  
C. Corbitt, Asst. Secy.

The Edison Electric Light Company,  
65 Fifth Avenue,

New York.

Ammington Root  
Spiral pipe



Lawrence Mann

April 9th 81.

Dear Sir,

Your favor of 7th inst. regarding agreement in relation to engine is recd. It is drawn correctly and is accepted by us.

We are pushing along the engine

Yours truly

Armstrong & Co.

W. H. C. A. C. M. & Y. (1)



Lammie Man  
April 12<sup>th</sup> 81. —

Dear Sir,

Thanks for your favor of 11<sup>th</sup>  
Shouldn't get so "hard up" that we  
cannot "turn around" we will avoid  
ourselves of it — but we hope to get  
along without it, as we prefer to have  
something to show first. At any rate we  
will see that the work is not delayed

We are Yrs truly,

Armington Jr

Thos A Edison Esq  
Muhuk.

Edison Machine Works,

104 Goerck Street,

New York.

April 12 1881

Mr Edison,

Dear Sir,

Please send me  
a check for \$500.00.

Yours &c

H L Deane  
Super

T. A. EDISON,  
65 Fifth Avenue.

New York, 18<sup>th</sup> April 1888

Received of Thomas  
A. Edison the sum  
of Five Hundred  
Dollars as a  
temporary loan  
L L Doan

E. Mathewson

C. H. Doan  
Apr 13<sup>th</sup>

Receipt for  
Temporary  
Loan

Edison Machine Works,

104 Goerck Street,

New York, Apr 16<sup>th</sup> 1887.

E. A. Edison, Esq.

Edison Electric Light Co.

At 65 Fifth Ave.

City.

Dear Sir,

I beg to introduce to you, the  
beard, Mr. John Adams who had charge  
of their Works previous to our taking them,  
and who has been connected with Mr Roach  
for several years.

Yours very truly,

*H L Roan*  
Supt.

Edison Machine Works,

104 Goerck Street,

New York, April 23 1887

Mr. Edison:

I have a very bad cold  
so that I will not come over  
here to-morrow. The pepper is  
not here for the Dies so that I  
don't think there is any use of  
working Sunday until we get  
them.

Yours Truly

*H L Roan*  
Supt.

Edison Machine Works,

104 Goerck Street,

New York,

April 25<sup>th</sup> 1887

Mr. Edison:-

Please send me a  
requisition on Mr. Murray for  
third tape and oblige

Yours Truly  
L. Deane  
Perfor



Lawrence Mass

May 27<sup>th</sup> 81. —

Dear Sir,

Mr. Horn will inform you of  
how matters are here. He had hoped  
to have sent for you this week, but shall  
have to defer it till next week. We  
find that we have let our other work  
have the "go by" to get out your engine  
and fearing to delay work and get  
things placed us in rather straitened  
circumstances and we will be obliged if  
you will send us a check for \$1000. for  
us the 20<sup>th</sup>, next Monday

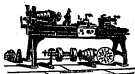
Obliged &c

Thomas Robinson

Mr. A. W. C.

Wm. J. G. J.





Edward P. Hampson & Co.,  
STEAM ENGINES AND BOILERS,  
WOOD AND IRON WORKING MACHINERY.



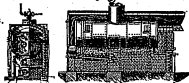
**SAW MILLS,**

Grain Mills, Hoisting Engines, Etc.

36 Cortlandt Street,



EDWARD P. HAMPSON,  
W. F. HARKING.



New York, June 4 1881

Thos. A. Edison Esq -

Sir - I have just  
received Bill of Lading of the  
2 Portables for South America,  
they leave to day from shop -

Yrs Truly

E. P. Hampson & Co

OFFICE OF  
Edison Machine Works,  
104 Goerck Street,

New York July 26<sup>th</sup> 188,

John Randolph Esq  
Wm. B. Park - N.Y.

Sir -

I wrote to Mr Logan a few days ago - inquiring if he had any one double covered magnet wire, but have not received any answer. Therefore I look to you to please let me know immediately how many lb. you have and send it along as soon as possible.

Yours truly

J. L. D'Arco Esq  
Chas. Ematt

OFFICE OF  
Edison Machine Works,  
104 Goerck Street,

New York Aug 1<sup>st</sup> 188,

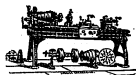
Thos Logan Esq - Wm. B. Park  
N.Y.

Have you the raising pieces for raising the front and back heads of a lathe - If so please send them here immediately for I wish to use them on my lathe.

Yours truly  
J. L. D'Arco Esq  
Sup

Page 10

Chuck Javord  
Chain Blocks



EDWARD P. HAMPSON,  
W. F. HARRIS.

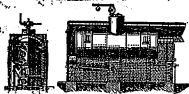
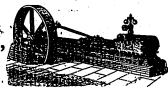
Edward P. Hampson & Co.,  
STEAM ENGINES AND BOILERS,

WOOD AND IRON WORKING MACHINERY.

**SAW MILLS,**

Grain Mills, Hoisting Engines, Etc.

36 Cortlandt Street,



New York, Aug. 3 1881

Thomas A. Edison Esq  
65 - 5th ave.

Dear Sir - Will  
you please send me check  
for balance of a/c., I am  
trying to get away for a  
short vacation, and shall  
be short with out if you kindly  
respond -

When are you going  
to let me have particulars  
so I can finish up the Engines  
ordered? -

Please answer as I am  
all alone here & cant get away  
to call on you -

Yrs. Sincerely  
E. P. Hampson

T. A. EDISON.

Menlo Park, N. J., October 16 1887.

Samuel Insull

Dear Sir:

Enclosed

please find bill against Edison  
machines - I have made  
the following change on  
my books and now leave  
the matter to you  
W. J. Books ~~Ed~~ 22.70

Dr. Edison March 6 <sup>22.70</sup>

you will find this on the  
statement I send you to  
day (W. J. Books Enclosed)

Very truly  
Yours  
T. A. Edison  
H. A. Brown

SEYMOUR & WHITLOCK,  
Consulting Engineers  
AND  
M'RS OF MACHINERY.

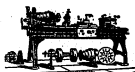
43 Lawrence St.,  
Newark, N. J., Aug 5<sup>th</sup> 1881

E. A. Edison Esq.  
Menlo Park.

Dear Sir

We find the statement  
made out wrong. That is, the charge  
for \$36.<sup>75</sup> we sent the bill to Edison  
Machine Co. N.Y. at proper time and  
do not know how we came to pass  
the amount to you. We enclose now  
statement & sent duplicate bill  
to N.Y.

Yours truly  
Seymour Whitlock



EDWARD P. HAMPSON,  
W. E. HARRIS

Edward P. Hampson & Co.,  
STEAM ENGINES AND BOILERS,

WOOD AND IRON WORKING MACHINERY.

**SAW MILLS,**

Grain Mills, Hoisting Engines, Etc.

36 Cortlandt Street,



New York, Aug 8 1881

Samuel Russell Esq

Friend - Will you  
kindly give attention to payment  
of balance of my a/c - I dropped  
a line to Mr Edison last week  
about it, on the 10th I have to  
meet some large payments -

I would call in person  
but am all alone here & driven  
to death with business -

Please attend  
to this for yours sincerely  
E. P. Hampson

Drop me a line by return post -



Edward P. Hampson & Co.,  
STEAM ENGINES AND BOILERS,

WOOD AND IRON WORKING MACHINERY.

**SAW MILLS,**

Grain Mills, Hoisting Engines, Etc.

36 Cortlandt Street,



EDWARD P. HAMPSON,  
W. F. HARRIS.

New York, Aug 10 1881

Samuel Insull Esq.,  
85 Fifth av.

Dear friend - You are  
"real good" to answer so promptly,  
and I am very much obliged  
to you - if you will take care of  
me before the 26<sup>th</sup> inst. I can  
get along -

I wish Mr Edison could  
let me know about what Engines  
he wants this week, before I go  
away, try to have him do so -

I am tied down here, until  
next week, all alone - & tired out.

Yours sincerely  
E. P. Hampson



Prentiss	652.26	These are extra payments on the balance which are due quarterly.
Wingom	208.13	
Herschler	1053.82	
Roach	358.44	
Carraker	151.45	
Smearino	30.00	
Proctor	28.12	
Samuelson	687.48	
Brant Bros	48.48	
Gavin	927.00	
Roach	1494.99	Roach 1494.99
Chesnut	22.08	Brant 14.00
Cratt & Whiting	1400.00	Plan 8097
Pan coast - Two	38.70	Please telephone me as soon as you get this report the present is 107.10 for Saturday
Thompson	371.82	
Hillard	624.53	
Place	8097.87	
	15905.47	
Shafter	732.72	Please telephone me as soon as you get this report the present is 107.10 for Saturday
Satzen	115.00	
Pay Roll	2500.00	
	<u>19253.25</u>	

3097.87	V C D
371.82	h c h
1053.82	o k s c c
1494.99	A C Y
732.78	V S h L
687.48	m v
1625.00	Y Y
1605.00	small bills on desk

10668.76	
2200	
12868.76	2500
8216.41	2398.65
4652.35	8317.76
	<u>8216.41</u>

Edison Machine  
works

Statement Money  
required  
inc. ending  
20th Aug 01

OFFICE OF  
Edison Machine Works,

104 Goerck Street,

New York, Aug. 30<sup>th</sup> 1888.

Mrs. E. Randolph, Esq.

of T. A. Edison, Esq.

Manhattan Park,

N. Y.

Dear Sir,

Please let me know by return  
mail the cost of the Machinery lately  
shipped to us from the Park.

Yours truly,

Edison Machine Works

by Standard Express

Large Lathe 258.  
Drill Press 525.

Please bring my money to Edison Machine Works, and  
if I should happen to be out, leave it with the  
Cashier there W. H. H.

Edison Machine Works  
Goerck St.

New York  
Sep 14<sup>th</sup> 1887-

Mrs. John Randolph  
Dear Sir

I send you my M<sup>t</sup>  
of Time, and expenses in  
shipping the Machinery wh.  
Mr. Hughes consigned to me.

I shall also mail a letter  
to Mr. Hughes, which he kind  
enough to deliver or forward to  
him should he not be at  
the Park.

Yours truly  
W. H. Andrews

TO S. Francis Eng  
65 Fifth Ave  
City

OFFICE OF  
EDISON MACHINE WORKS,  
104 GOERCK STREET,

NEW YORK, Sept 188

Enclosed you will find The report  
of the wiretest asked for by The American  
Copper Co, also the letter to Mr Edison,  
and a piece which The man in the  
Supply department sent, for the samples  
of wire that I got, in order to make the  
test

Yours Truly  
Francis J. Jell

[ENCLOSURE]

W.E. Dodge, Jr. Pres.

G.P. Conley, Treas. & Secy.

A.A. Conley, Secy.

Stenographic Letter  
P.O. Box 2373.

*Ansonia Brass & Copper Co.*  
*No. 19 Cliff Street,*

*New York, Sept. 19th 1881.*

Thos. A. Edison, Esq.

No. 65 6th Ave. City.

Dear Sir:

Will you please inform me what is the relative resistance of the Zinc White insulation which we are furnishing you on patented wire, and the ordinary Paraffine insulation in common use? In other words I wish to know how much superior the Zinc White insulation is to the other.

I remain,

Very truly yours,

*A. H. Conley Secy.*

Electric Light Supply Dept.  
Please let them have  
samples of the same  
your friends here

2 1/2 lbs	No 10	Paraffine wire	25	-	5-21
2 "	"	" 10	Paraffine "	50	60

Shipped by messenger Sept 27th 1881.

*D. B. K. & Co. Publishers*

[ENCLOSURE]

TO Thomas A. Edison Esq  
65 Fifth Ave  
NY

OFFICE OF  
EDISON MACHINE WORKS,  
104 GOERCK STREET,  
NEW YORK, Sept 25 1881

Dear Sir

I have ascertained, as you requested the relative resistance of the paraffine and zinc white wire, the results of which are as follows. Paraffine when first put in water gave a resistance of over 100,000 ohms, and continued to maintain this for two consecutive hours, then tested again after a period of fourteen hours gave a resistance of 110,000 ohms. Now the

TO \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2  
OFFICE OF  
EDISON MACHINE WORKS,  
104 GOERCK STREET,  
NEW YORK, \_\_\_\_\_ 1881

zinc white wire when put in the water gave a resistance of 6000 ohms, but the resistance gradually diminishing so that at the end of two hours it fell to 1800 ohms, It was also tested again at the end of fourteen hours and its insulating resistance being only 570 ohms. These results show that the paraffine wire is much superior to the zinc white wire. The zinc white wire

[ENCLOSURE]

TO \_\_\_\_\_

OFFICE OF  
EDISON MACHINE WORKS,  
104 GOERCK STREET,

NEW YORK, \_\_\_\_\_ 188

3

being more porous, and the water  
percolates easier through, and thus making  
defective insulation, while the paraffine  
which is more impervious to moisture and  
water than the zinc white, and also when the  
paraffine is put on the wire, it being hot, and  
far more subtle than the zinc, enters into all  
the pores, fills them up, and this making  
better insulation.

Yours very truly,  
Frank J. Jell

Machinists' Tools  
AND  
**MACHINERY**

OF EVERY DESCRIPTION.  
—PATENT—  
Cold Rolled Shafting,  
Couplings, Pulleys,  
**SELF OILING BEARERS**  
Tannite Emery Wheels & Mach'y.

Belling, & Co.

P. O. Box 4406

Established 1855.

OFFICE OF

# The George Place Machinery Agency,

121 CHAMBERS & 123 READE STREETS.

New York, Sept 3<sup>rd</sup> 1887

Mr A Edison Esq  
NY City

I have made a great many  
inquiries about the tariff on Machinery  
for France & have found a great  
deal of difficulty in getting the information  
I am now in the track  
of getting it & hope to be able to know  
all about it by to-morrow or next  
day & will then write or see you.

Yours truly  
H M Linn



Estimate of amount of  
funds required to meet  
Sept. payments.

Place	20000.
All other small bills	20000.
Pay Roll	10000.
	<hr/>
	50000.

*Handwritten signature or flourish*

Mechanists' Tools  
AND  
**MACHINERY**  
OF EVERY DESCRIPTION.

Cold Rolled Shafting,  
Couplings, Pulleys,  
**SELF OILING ROLLERS**  
Pencil Emery Wheels & Hacky.

Belting, &c.

P. O. Box 4389

Established 1855.

OFFICE OF

# The George Place Machinery Agency,

121 CHAMBERS & 103 READE STREETS.

New York, *Oct 1 1881*

*Thos A Edison Esq*

*Dear Sir*

I find the tariff list I referred  
to was issued in 1877 & am informed  
that it has been modified since. Have  
just written to the Am Consul at  
Havre for a fresh tariff list which  
will be here in say 3 weeks & will  
then send it to you.

*Yours truly*  
*Wm Linn*



Lansing Mass. Oct 1<sup>st</sup> 87.

Dear Sir,

I found upon application to our Tool people that they were very willing to furnish us with tools and that our credit was good enough to get enough for the present. Some lathes & other tools we found in the market, but Plummer we have got to wait for ~~order~~ and it will help us out if you will let Mr Swan ship us the J. H. Allen planer, that he was kind enough to offer us. We hope you will soon want an engine a day - put in your order and we will try to meet them by increasing our facilities to keep pace with them.

Yours truly,

John A. Edin Esq  
New York.

Wm. H. Armstrong Esq



Oct. 1. 81

Dear Sir,

We are in receipt of the enclosed notice from George & -  
Please don't let them "draw" for this for  
"numerous" reasons, 1<sup>st</sup> we haven't got  
any money and couldn't meet the  
draft. - 2<sup>nd</sup> Although it was a  
very unfortunate accident, and much  
regretted by us, yet it is perfectly clear  
that the breakage was from weakness in  
the shaft? - It is claimed that when  
it broke, the engine was running very  
slow with dry steam - there was of course  
nothing to break it then - but might there not  
have been water allowed in the cylinders at  
some previous time which then broke it and  
it was waiting for a chance to drop off -

Mr Sims when he came home reported  
very strongly against the Patcock & Sons



bills on <sup>2</sup> account of its liability  
to take on water and I  
learned the other day when at the  
works that the bills worked rather badly.  
If this was the case, if the shaft had  
not broken the cylinders would - something  
had got to go. -

We want to be perfectly fair and do  
just what is right in the matter but  
please stop the draft. -

Very truly

Amos A. Smith

Thomas Addison Esq  
65 Fifth Avenue  
New York

[ENCLOSURE]

OFFICE OF

Edison Machine Works,

104 Goerck Street,

New York Sept. 29<sup>th</sup>, 1881.

Messrs. Amington Sims  
Lawrence, Mass.

Dear Sirs,

We would like very much to  
have settlement of our bill Aug. 31. \$ 347.07  
If agreeable we will draw at sight for  
same Oct. 3/81.

Yours very truly,

Edison Machine Works

by Edward Roop



Oct. 6. '84

Dear Moore,

The Builders Iron Foundry of Providence (or the Chaffee or the Brewster) will probably write Edison as to his opinion of the Lammie Engine. The Builders Iron Foundry is managed by Austin Robertson, and they want to build our large Engine (from 12 to 20 up) under a royalty. He would like to make an arrangement with them, as this would still keep us in the market <sup>with</sup> the large size and leave us to put all of our strength in four engines, or the small size. — Please ask Edison, if he won't write them enough in detail of what we have got for value or regulation to give us a good send off. — Y<sup>rs</sup> Geo. P.

6<sup>th</sup> Oct

The Edison Machine Works  
104 1/2 Greenwich Street  
City

Please ship by S. S. Zealand  
sailing on 10<sup>th</sup> inst one ~~crude~~  
machine together with eight  
and eight 1/2 lamps together with  
regulating box sockets &c to

Donation General

Des Chemins de Fer allemands  
a la station d'Alsace  
Strasbourg

Order the lamps from Edison  
Lamp Co. Menlo Park N. J. telling  
them that the lamps are for  
isolated plant to be used to  
Strasbourg & that the lamps are  
not very new than but old

Order from S. P. H. & Co  
a resistance box with eight 1/2 ohms  
resistance eight lamp sockets  
with cords

I will give you the necessary  
instructions as to where to  
require tomorrow  
55 to Howard Hill & Puckett & Puckett



23 Avenue de la Opéra Paris  
France and draw on them  
through Bixel noyand & Co for the  
amount of same at ten days sight  
Yours truly

A. E. Edman

Tell the L. E. Co that the  
A Camps must be ten and  
the B Camps twenty per centum  
above power

7<sup>th</sup> Oct 1

Edison Machine works  
104 Greenwich Street  
City

Please make for shipment to  
London ten "Z" Dynamos with "A"  
armatures and ten "Z" Dynamos  
with "B" armatures. Ten of these  
to be with "A" & five with "B" armatures  
should be shipped by steamer sailing  
not later than 25<sup>th</sup> October & the  
arriving on or week after.

Please order to go to London for  
us with three machines one  
thousand field lamps and one  
thousand "B" lamps. Three lamps  
must be without sockets having  
wires showing. In ordering these  
lamps please state that these are  
the lamps about which Mr Edison  
spoke to Mr. Upson & that the latter  
know exactly what is required.  
Inform the Lamp Co. that the  
lamps are for use in England.

Ordered from S. Bergmann & Co  
three regulating boxes each having  
eighty ohms resistance.

Yours faithfully  
Thos A Edison

7th Oct 1  
Please order from L. Bergmann  
& Co to go to Chaschaury the following  
30 cutout  
100 No 1 Plugs

2.5 " 2 "

2.6 " 3 "

130 First endh slant

50 Pout

30 Connections see list

It is also necessary to send  
with this plant the following  
3 lbs 2 1/4 in. Staples

" 1 " "

" 1 1/4 " "

" 1 1/2 " "

Yours truly

Phos A Edison

THOMAS A. EDISON, *lights*

No. 65 FIFTH AVENUE,  
NEW YORK, *8th Oct 1881*

*My dear*  
Messrs Armington & Sons  
Lawrence, Mass

Dear Sirs

Please make two engines of the #750 pattern with relief valves fixed to them. These engines are for shipment to Europe and are wanted at the very earliest possible moment. Please let me know when they will be ready.

They must be shipped to Genoa & to be tested & changed to the Edison machine works

I have not yet got the large order from England about which I spoke to you. Am expecting it daily.  
Yours truly

Thos Edison

W.E. Dodge, Jr., Pres.

Clonographic Letter  
#48 Oct. 23/88.

G.P. Charles, Treas. & Secy.

A.L. Charles, Secy.

Ansonia Brass & Copper Co.  
No. 19 Cliff Street,

New York Oct. 11th. 1888.

T.A. Edison, Esq.

No. 85-Fifth Ave. City.

Dear Sir:

I have received your esteemed favor of  
Oct. 8th., by which it appears that the Zinc White is a good  
insulator for wire when in a dry place, but is ~~not~~ good to  
stand water. This is as I supposed.

Thanking you for your kind attention,

I remain,

Yours truly,

*A.L. Charles* Sec'y.

OFFICE OF  
Edison Machine Works.

104 Goerck Street,

New York, Oct 12<sup>th</sup> 1881

John Randolph Egly,  
Minto Park, N. Y.

Dear Sir:

Will you  
please bring over at once a bottle  
of pure zinc in globules which is  
up stairs in the laboratory and is  
marked: from Johnsons Matthey & Co  
London. Mr. Edison requires this  
in experimenting. Bring it at  
once to the testing room 104  
Goerck Street New York City, and  
oblige

Yours truly

Frank J. Allen

Recd Oct 13<sup>th</sup> 1881

J. R. E.



Ans'd. Edison Mach. Works  
Lansdowne, Pa. Oct. 17, 81

Oct 17 81.

Washington, D.C.  
of 8th

Dear Sir,

Your favor, ordering  
two 8 1/2 x 10 Engine is recd, but in  
the absence of the winter has not been  
acknowledged. The pattern are well along  
and we shall come thru right ahead. -

Please advise us of size of balance  
wheels required and whether one wheel  
is wanted or two - the speed of engine  
will be 300 Revs per minute. -

We are getting in our new tools  
and hope to be able before many weeks  
to give you all the engine you want -  
until then we will do the best we can

Yours obediently  
Edison

Yours truly  
J. H. Thompson

# The Southwark Foundry and Machine Company.

Sole Makers of

## The Porter-Allen High Speed Steam-Engine.

W. H. MERRICK, President.  
C. T. PORTER, Vice-President.  
G. A. BOSTWICK, Secretary.  
C. B. RICHARDS, Superintendent.

PHILADELPHIA,

Oct 1<sup>st</sup> 1881

My Dear Sir:

I am in distress about the engine sent to London. My arrangement with Mr. Johnson in Major Easton's presence, and to which he also agreed, was expressly that I was to be notified when it was ready to be tried, and should see personally to its being all right. How could you send it off so?

Nothing will now do but for another engine to be tested by means (sent in place of it. They are duplicates, the clutches are interchangeable, (one will meet that matter any way) and this is absolutely necessary. I have also several things to change, especially the lubricators. Your own interest and mine are identical in this matter. I have no confidence in the governor action. Must send an engine that I myself find perfect.

The one we were trying on Friday & Saturday will not do as it has an exceptionally long shaft. Others all alike. There is plenty of time. When can I see you?

Very Truly Yours  
J. A. Erison Ph.D. Chas. T. Porter

Address all business communications to the Company.



2. English Light and High Speed Steam Engine

2. English Light and High Speed Steam Engine. The engine is of the type known as the "English Light" and is of the type known as the "High Speed Steam Engine". The engine is of the type known as the "English Light" and is of the type known as the "High Speed Steam Engine".

2. English Light and High Speed Steam Engine. The engine is of the type known as the "English Light" and is of the type known as the "High Speed Steam Engine". The engine is of the type known as the "English Light" and is of the type known as the "High Speed Steam Engine".

English Light

Oct. 1781

2. English Light and High Speed Steam Engine. The engine is of the type known as the "English Light" and is of the type known as the "High Speed Steam Engine". The engine is of the type known as the "English Light" and is of the type known as the "High Speed Steam Engine".

1. English Light

2. English Light and High Speed Steam Engine. The engine is of the type known as the "English Light" and is of the type known as the "High Speed Steam Engine".

C. E. BOSTON, Massachusetts.  
C. E. BOSTON, Massachusetts.  
C. E. BOSTON, Massachusetts.  
C. E. BOSTON, Massachusetts.

1881

The Boston-Venue High Speed Steam Engine

1881

[FROM SAMUEL INSULL]

Howe's index 3

Oct. 18. 1890

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insull  
insull

Oct. 18th,

Chas. H. Vandyno,

150 Nassau St., Brooklyn, L.I.

Dear Sir:

Referring to your favor of the 12th, Mr. Edison requests me to state that he has got all that he requires in the way of Steam Engines for use in connection with his electric light system.

Yours truly,

The Southwark Foundry and Machine Company,

Sole Makers of

The Porter-Allen High Speed Steam-Engine.

W. H. MERRICK, President.  
C. T. PORTER, Vice-President.  
G. A. BOSTWICK, Secretary.  
C. B. RICHARDS, Superintendent.

PHILADELPHIA,

Oct 20th 1876

J. A. Edin D.D.

My Dear Sir:

I have appointed to meet at your Machine Works on ~~Friday~~ Monday morning next a man, now out for us, who will attend to everything that is wanted on our engines there. I am exceedingly anxious to meet you there at that time. Monday all day.

Very Truly Yours

Chas. T. Porter D.D.

Recd. 10/20/76

20<sup>th</sup> Oct - 1

Edison Machine works  
114 Greenwich Street

Referring to my letter of 27<sup>th</sup>  
all ~~my~~ <sup>your</sup> instructions catch to ~~the~~  
the order until otherwise advised  
I will ship to Col. Gouraud by  
National Line S. S. Canada sailing  
26<sup>th</sup> inst three of machines with  
all accessories

Order from Edison Lamp Co  
with instructions to them exactly  
in accordance with my letter of  
27<sup>th</sup> & all and <sup>three each</sup> subsequent  
memorandum. <sup>Three each</sup> A lamp each  
to be packed in separate boxes

Order from S. Bergmann & Co  
three Resistance Boxes for regulating  
the machine with 80 ohms resistance  
each. Also order from S. B. Co three  
different <sup>80 Lamp</sup> sockets with cells

80 Cutout  
100 No 1 Plugs  
25 " 2 "  
25 " 3 "  
150 Two inch cleat  
50 Draw  
20 Connections for No 10 wires

Each of these plants should also  
have sent with them

3 cles of 1/4 in staples

3 " " " "

3 " " 1/2 " "

3 " " 1/2 " "

The Boxes of each shape should  
be marked so to make easily  
distinguishable each separate plant.

Heard obtain from Bergmann  
exact cost of his goods & let me have  
an exact estimate of cost of each  
plant early tomorrow. Take the  
cost of lamps at fifty cents each  
Deeply fully.

Thos A Edison

Each outfit should have two days  
after bunches sent with it.

Wm. H. P. 1890

Oct. 24th,

Armington & Sims,  
Lawrence, Mass.

Dear Sir:

I quite over-looked yours of the 17th, Mr.  
Edison wants two Engines exactly the same as you furnished  
Moore, each having two wheels.

Yours truly,

Secretary.

Oct. 25th,

Southwork Foundry & Machine Co.,

Phila. Pa.

Dear Sir:

On or about the 30th of June I sent you  
Mr. Morgan's check for \$2,000 for the engines at  
present in London. The voucher for this payment is  
missing. Would you do me the very great favor of  
sending a duplicate?

Yours truly,

Oct. 25th,

Haj. Eaton:--

Referring to the enclosed, we have still a third engine that has never been used. It is the one in question, bought for experimental purposes. The engine with the boiler is in the central station. The second one is used for testing purposes at Ford's, and the third one is the engine above referred to, bought for experimenting.

Yours truly,

THE  
SOUTHWARK FOUNDRY AND MACHINE COMPANY,  
SOLE MAKERS OF  
The Porter-Allen High Speed Steam-Engine.

W. H. MERRICK, Pres. and Treas.  
C. T. PORTER, Vice-President.  
G. A. BOSTWICK, Secretary.  
C. B. RICHARDS, Superintendent.

PHILADELPHIA, Oct 27<sup>th</sup> 1881

Thos A. Edison Esq.

Dear Sir:

We enclose herewith duplicate bill of June 14/81, for \$2000. as requested in your favor of 25<sup>th</sup> inst

Yours Truly,  
E. A. Bostwick,  
Secretary.

Oct. 30th,

Messrs DAVIES & Co.

15 Norway, City.

Dear Sir:--

Will you please advise me at your earliest convenience  
exactly what method of procedure is best in order to ship goods to  
London and the Continent through you. We propose to do our own ex-  
pressage, but we wish you to relieve us of all trouble as to ship-  
ment. We are sending frequently large shipments to London by  
steamers sailing directly for that port. We would have to rely  
upon your getting us the lowest possible rates and we would specify  
the steamer by which we wished the goods to go by. Part of the  
goods will have to come from Menlo Park. Please let us know how  
you would have us deliver them. Shall we send them direct to the  
steamer or ship them to the Penn. Depot subject to your order? If  
the latter, would we address them to our correspondent in London, or  
simply address them to you?

We would want you to keep us advised as to the weekly  
steamers, the last moment which we could send the goods to the dock  
and any other information to facilitate the rapid shipment of the  
goods, as it is a matter of the greatest importance to us that they  
should go so soon as they are ready, and that we should receive the  
Bill of lading as soon as possible, as we have to present them in  
order to obtain payment for them here.

Yours truly,



1818, AMERICAN SOCIETY OF

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*[Signature]*

The American Society of Mechanical Engineers purpose holding a Meeting in this City on the 3rd and 4th proximo; and as it is the custom of the Council, on such occasions, to obtain for the members, who come from all parts of the Country, the privilege of visiting and inspecting whatever there may be of professional interest in the vicinity, I am instructed to ask if you will kindly permit, such as may be disposed, to examine the works in your charge during the current week. The arrangements do not contemplate anything like organized excursions and the members will probably visit the places which are thrown

open to them at various times and alone or in small groups.

To prevent unauthorized persons from availing themselves of this opportunity each member of this Society will exhibit a card of introduction.--

Yours truly,

Thomas Whiteside Rae.

Sec'y.

Thomas A. Edison Esq.  
65 Fifth Avenue  
New York City

1. 1000  
 2. 1000  
 3. 1000  
 4. 1000  
 5. 1000  
 6. 1000  
 7. 1000  
 8. 1000  
 9. 1000  
 10. 1000



Machinists' Tools  
AND  
**MACHINERY**  
OF EVERY DESCRIPTION.  
-PATENT-  
Cold Rolled Shafting,  
Couplings, Pulleys,  
**SELF OILING HANGERS**  
Fits Every Wheel & Rack.

BELTING, &C.

P. O. Box 4499.

Established 1855.

OFFICE OF

# The George Place Machinery Agency,

121 CHAMBERS & 103 READE STREETS,

New York, Nov 2 1881

Mr. Thomas A. Edison

Dear Sir,

Your personal letter  
has just been read by me, its contents  
are a gross exaggeration, as are the  
greater injunctive and it is horribly  
unlike you to condemn a person unheard.

I would be obliged to  
you if you will grant me an interview.  
I wish to place myself straight in the  
premises.

Please advise by return  
at what time this evening or tomorrow  
morning I can see you.

Yours  
H. M. Linn

Machinists' Tools  
AND  
**MACHINERY**  
OF EVERY DESCRIPTION.

-PATENT-  
Cold Rolled Shafting,  
Couplings, Pulleys,  
**SELF OILING HANGERS**  
Turned Every Wheel & Mach'y,

**BELTING, &c.**

P. O. Box 4499.

Established 1866.

OFFICE OF

# The George Place Machinery Agency,

121 CHAMBERS & 103 READE STREETS,

New York, Nov 3rd 1887

Mr Isaac

Dear Sir

Your reply to my note reached  
here just after I had left the store  
last evening. Therefore I was not at  
65 Fifth Ave last night.

Will you find out from the Sellers  
if I can see him this morning or if  
not this evening and at what time  
& much obliged.

Yours truly

H. M. Lion

File Over  
Cannon machine  
W. R. B. B.

18 Columbia St  
Newark  
N. J.



Has any action been  
taken on my letter of  
last week desiring  
permission for self &  
friend to visit the  
machine works in  
secret?  
Yours respectfully,  
J. J. Martin.

To the Editor  
New York City

9<sup>th</sup> Dec 1

Edison Machine Works  
104 Gower St

Please ship to Col. Gouraud  
at the earliest possible date  
seven 1/2 Dynamos with 20" armatures  
and ten with 18" armatures <sup>to be</sup> ~~sent~~ <sup>from</sup> the Edison Lamp  
Company seven sets of 20" lamps  
each set to consist of 100 lamps  
and ten sets of 18" lamps each  
set to consist of 200 lamps <sup>of the new kind</sup> each  
each set of lamps  
must be packed in 2 different  
boxes. The lamps must have the  
new form of socket on them

Address Edward J. Bergmann & Co  
seven different sets of

80 Lamp sockets <sup>of the new kind</sup> with locks

80 Cut Ribs

100 No 1 Plugs

25 " 2 "

25 " 3 "

150 Gas inch clips

50 Pans

80 Connections for 22 wires

also order from E. Bergmann & Co

ten different sets of (of the new kind)  
 120 Lamp sockets with cocks  
 30 Cutouts  
 100 No 1 Plugs  
 25 " 2 "  
 25 " 3 "  
 150 Two inch cable  
 50 Four inch cable  
 20 Connections for wire wires

I will give you instructions  
 as to Reelstand Ropes in the course  
 of a day or so. In ordering the  
 above from S. B. & Co draw special  
 attention to the fact that the sockets  
 must be of the new kind.

Each of these seventeen plants  
 should have sent with them two  
 dozen extra fuses together with  
 3 lbs of 1/4 inch staples

3 " " 1/4 " "  
 3 " " 1/4 " "  
 3 " " 1/2 " "

You may ship the Dynamos  
 before you ship the rest of the  
 plants but each has sent should be  
so marked as to enable Col  
 Saunders to identify each separate

plant  
Mrs. Inuit will arrange for  
your receiving payment on ~~the~~  
your ~~last~~  
Thos A Edison  
I

1786  
1786  
1786



OFFICE OF

Edison Machine Works.

104 Goerck Street,

\$2500.<sup>00</sup>/<sub>100</sub>

New York, Nov. 9<sup>th</sup> 1881.

Received this day of Nov. a  
check the sum of Two thousand  
five hundred + <sup>00</sup>/<sub>100</sub> dollars for  
payment and credit to ac of  
Chas. B. Babelor.

Edison Machine Works  
by Charles Babelor

THE EDISON ELECTRIC LIGHT CO.,  
65 FIFTH AVENUE.

New York, Nov. 11 1881

Mr. Edison,

It would be  
well - as soon as the  
patterns can be spared,  
to round all the edges  
of the base and field  
for 2 dynamos and  
introduce any features  
in the way of graceful  
curves which certainly  
will add much to the  
appearance and nothing  
to the cost of the machine.

Yr. truly  
Chas. B. Babelor



No 1288. —

Dear Sir,

Your favor Enquiring  
When the 2 Engines 8"x10 could be  
delivered is recd. — We are somewhat  
delayed in these Engines owing to the  
delay in getting the steel castings for  
frames from Pittsburgh, which have not  
yet come to hand and cannot name  
a time when they will be done. — We  
shall make you kind indulgence until  
we get settled in our new quarters in  
Providence when our facilities will allow  
us to satisfy your orders without  
any delay — We have been busy for some time  
in special tools to enable us to work to  
advantage. —

Yours truly,

John Edison

Edison & Lalande  
Providence R.I.

No. 42Series M

BY THIS POLICY OF INSURANCE,

\$400.

THE

**Hartford Steam Boiler Inspection and Insurance Co.**

OF HARTFORD, CONN.,

In Consideration of the Receipt of Five Dollars, do Insure

**THE COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY**

and their legal representatives, or parties to whom they may assign or transfer this Policy, (per form on back,) to the amount of **Four Hundred Dollars**, on the Baxter Steam Boiler and Engine manufactured by them, and designated by the number M. 42 against all such immediate Loss or Damage as shall be caused to the property specified by **EXPLOSION** or **RUPTURE** from the action of steam, from the fourteenth day of November eighteen hundred and eighty one at 12 o'clock, noon, unto the fourteenth day of November eighteen hundred and eighty two at twelve o'clock, noon, to be paid at said Hartford, within thirty days after notice and proof of loss has been made by the assured.

*It is expressly covenanted, That this Company is not liable, under this Policy, for Loss or Damage resulting from the burning of the building or steamer in which said Boiler may be used, nor for any Loss or Damage to any Steam Boiler not provided with a proper Steam Gauge; and that in no case shall the claim be for more than the actual and immediate damage insured against, estimated according to the true cash value of the property at the time of the explosion; and it is hereby agreed that any Inspector of the Company shall at all reasonable times have access to said Boiler and the machinery connected therewith, on which safety depends; and should such Inspector, or any person interested in the Boiler, at any time discover any defect of all affecting the safety of said Boiler he shall notify the assured, and this Policy shall become void, unless the Boiler ceases to be worked until such defect shall be thoroughly repaired; such repairs to be made at the expense of the assured. And this Company reserves the right at any time to cancel this Policy for any cause materially affecting the character of the risk, in which case the Company will return to the assured a ratable portion of the premium for the unexpired term of this Policy.*

**In Witness Whereof**, The HARTFORD STEAM BOILER INSPECTION AND INSURANCE COMPANY have caused these presents to be signed by their President, and attested by their Secretary, in the City of Hartford, Connecticut, this 14<sup>th</sup> day of November, 1887.

S. B. Davis, Secretary.

J. M. Allen, President.

[ASSIGNMENT.]

For Value Received, We hereby transfer, assign, and set over unto The Edison Machine Works  
and their assigns, all our right, title, and interest in this Policy of Insurance, and  
all benefit and advantages to be derived therefrom.

WITNESS our hand this Thirtieth day of November 1888

THE COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY,

By [Signature]  
for Register No 1514

BOILER MAKERS'  
POLICY.

No. 42

Series M

Expires December 31st 1888



Insurance,	-	-	\$	<u>400</u>
Premium,	-	-	\$	<u>5</u>

EDISON MACHINE WORKS.

104 Goerck Street,

New York, Nov 18<sup>th</sup> 1881.

J. A. Edison, Esq.  
65 Fifth Ave.  
City.

Dear Sir,

I beg leave with to submit a preliminary  
statement of the financial condition of the Machine Works  
on the 1<sup>st</sup> inst. and remain,

Yours faithfully,  
Charles Roeck

October 31<sup>st</sup> 1881

October 31<sup>st</sup> 1881

5	2062	Edison One Milling Co.	
6		Edison Electric Light Co. of Europe	482500
8	12573632	Machinery & Tools	
9	68598	Office Furniture	
10	247416	Supplies &c.	
24	2384757	Ship Expenses.	
25	1822236	Extra Expenses	
54		Wm. Sackler & Co.	3091
58		Heim Leather Belting Co.	825
61		S. W. Wright	8825
63		Albion Booth & Hagedorn	743
65		Babcock & Wilcox Co.	306500
71		S. Bergmann	57526
73		C. B. Barvin & Co.	7450
75		Wm. Jessop & Sons	40507
77	596433	Patterns &c.	
80		C. P. Hampson	5025
81	232259	Cash &c.	
84		C. R. & W. W. Merrill	656
85		Granger & Co.	698
84		W. A. Wallacer & Co.	119596
88	417	J. M. Andrews	
89		John D. City	28291
97		Rev. Jesse M. C. C. C. C. C.	3245710
99		Paterson Bros	33902
104		Chas. Hubbard	46682
106	366661	Chas. Batchelor	
109		Edison Electric Light Co.	1329966
111		Edison Electric Light Co. of N.Y.	1646144
112		Capital &c.	13666661
115		Dr. F. Brown	33215
116		James Gregory	154
119		Thompson & Downie	42504
126		Hugh M. Bitt	15895
129		Quinton, Parsons & Copper Co.	417537
131		Dr. J. C. C. C. C.	60707
132		Notchkins Field & Co.	60360
135		Sundry Bros	449748
142		Union Bolt Works	378956
144		Waskell & Co.	39721
146		Dammat & Bell	24103
148		Pierant & Co.	29397
150		Washburn & Frost & Co.	132719
203	1898	Order D.	
204	1238052	C.	
208	243400	Harvest Trucks	
210	1750478	Order C & S	
212	484096	"	
218	62395	Carried over	22719184

[ENCLOSURE]

Ledger Trial Balance  
Continued.

#			Boat over	#	
214.	21862395	16146	Order Europe	227	19184
215.	309814		" B.		
216.			Profit & Loss %	238	234
218.	1053550		Order J <sup>#4</sup>		
220.	682330		" J <sup>#5</sup>		
222.	21452		" J <sup>#6</sup>		
224.	64444		" J <sup>#7</sup>		
226.	45736		" J <sup>#8</sup>		
228.	103353		Miscellaneous Charges.		
251			Chesler Mica & Porcelain Co.	130	1
252.			Vulcanized Fibre Co.	215	145
254.			Arthur & Bonnell	133	55
260.	1154		D. W. Richards & Co.		
261.			Newfelle & Son.	204	88
262.			P. H. Dunge & Son	33	10
265.			Bitto Machine Co.	114	975
268.			Manhattan Oil Co.	10	15
272.			Braid Bros	222	01
276.			P. Carragher Jr.	143	6
278.	920695		Altering C. Dynamo		
281.	106890		Order A.		
283.			" #1	340	074
284.	32221		Motor J <sup>#2</sup>		
285.			Pipe & Fittings	199	88
286.			Order J <sup>#2</sup>	418	486
287.			Electric Tube Co.	224	1
288.			Edison Lamp Co.	144	025
289.			Eugene F. Phillips	62	169
290.			MacPherson Willard & Co.	87	2623
291.			Alfred F. Moore	36	260
292.			Geo. B. Whately	149	641
293.			Electrical Supply Co.	682	7
294.	11563		Leiting P. & O. Engines		
295.	4542		Repairing P. & O.		
296.	73250		Order C. F.		
298.	14921		Electrical Locomotive		
353.			Abbot, Downing & Co.	512	25
354.			Kotly & Sterling	54	93
358.			W. Guinner & Co.	68	25
361.			M. D. Patterson & Co.	166	29
362.	183414		Order Beta Co.		
#	25470170			#	25470170

[ENCLOSURE]

## Plant.

1 125738 32

## Machinery &amp; Tools

We make up of this account, is  
about as follows:

Lathes, Planers, Drill presses,  
Shafting & Belting, about \$10000.  
Small Tools " " 2500.00

685 98

## Office Furniture

Consisting of desks, tables, chairs,  
safe, fixtures, etc.

3474 16

## Supplies Account

Consisting of bolt, nuts and  
material carried in shop stock.

3964 33

## Pattern Account

Consisting of all our patterns

2484 00

## Horses &amp; Trucks

Consisting of 4 horses, 1 truck  
1 express wagon & 1 buggy

13629649



Capital Account

156666.1

This account represents our capital, and is all paid up except \$666.61 which amount is due from Mr. Batchelor

Profit & Loss

238234

This account represents the profit on 5 or separators and scrap copper & iron sold to date.

Sundry Creditors

734830.5

This account represents the total amount owed various parties for current material and machinery.

The amount of each, being as follows:

Machinery \$6701.85

Material \$6781.20

# Expenses

23 547 57

## Shop Expense

This account represents the total amount of our current expenses to date.

Our average running expenses now, are about \$500. per month, made up about as follows:

Rent \$ 416.66

Coal 325.00

Insurance 83.00

Gas, oil, waste.	}	\$ 825.00
Horse feed & all		
incidental expenses		
Superintendent &	}	441.00
Assistant Foreman		

Wages - Engineer &amp; Foreman 140.00

" 4 Office Clerks 324.00

" 5 Shop " 311.92

" 3 Watchmen 171.84

" 3 Drivers 122.08

" 20 Laborers 989.60

Sundry Machinist

work for shop

742.72

Total for 1 month \$ 4862.82

15 222 36

## Extra Expense

This account represents the total cost of fitting up the shop and includes in it the expense of cleaning, repairing, painting, flooring, and also the cost of setting up all the machinery, foundations for same, &c.

We have thought best to keep this expense separate from any other account and it may now be disposed of, as is deemed proper.

4206993

# Product of the shop

1238052	<u>Order 6</u> This account represents the cost of the Paris dynamo. We have been paid on account of this work.	1255000
1750478	<u>Order 6<sup>3</sup></u> This account represents the cost of the work, as far as done, on the 24" C. machines for the Central station. We have been paid on account of this work.	1602433
309814	<u>Order 13</u> This account represents the cost of the old, uncompleted, 13" armature. We have been paid on account of this work.	300000
65736	<u>Order 6<sup>1</sup></u> This account represents the cost of the 4 small S. machines, only one of which is completed and then is for the Morse.	
290604	<u>Order 13<sup>1</sup></u> This account represents the balance of the cost of the South American plant of Messrs. Sabori & Company not yet charged off.	
32221	<u>Motor Account</u> This account represents the cost of 3 Home-made motor, not yet completed.	
920695	<u>Order 6</u> This account represents the total cost of the experimental work on the London & Paris machines. We have been paid on account of this work.	617131
	<u>Order 8<sup>1</sup></u> This account represents the profit on the first lot of 200 dynamos, before leaving any percentage for expenses etc.	340074
4607600	— Carried over —	4114638

Product of the Shop  
Continuation

\$	46076 00	<p>Port over</p> <p>Order J<sup>#2</sup></p> <p>This account represents the profit on the second lot of 20 g. machines before paying any percentage for expense.</p>	\$	41146 38
				41848 6
	434096	<p>Order J<sup>#3</sup></p> <p>This account represents the cost thus far of 50 g. machines not yet completed.</p> <p>It has been paid on account of this work</p>		81546
	1053550	<p>Order J<sup>#4</sup></p> <p>This account represents the cost thus far of 100 g. machines not yet completed.</p>		
	682330	<p>Order J<sup>#5</sup></p> <p>This account represents the cost thus far of 100 g. machines not yet completed</p>		
	21452	<p>Order J<sup>#6</sup></p> <p>This account represents the cost thus far of 100 g. machines not yet completed.</p>		
	64444	<p>Order J<sup>#7</sup></p> <p>This account represents the cost thus far of 100 g. machines not yet completed.</p>		
	73250	<p>Order B.T.</p> <p>This account represents the cost thus far of the C. test machine not yet completed.</p>		
	14921	<p>Locomotive account.</p> <p>This account represents the cost thus far of the electric locomotive not yet completed.</p>		
\$	6893643		\$	4614670

The above exhibit shows the total actual cost of all work in the shop on November 1<sup>st</sup> to be \$68936.43 and on account of which we have been paid \$46146.70.

2322 59

Cash Account

amount in bank November 12

9052 96

Sundry DebtorsDue from Sundry parties for small  
supplies sold. \$1411.35Due from Edison Electric Light Co.  
of Europe, for the 4 J. S. machines  
shipped to Paris. 8975.00Due from C. Batchelor, for the  
balance of his proportion of  
Capital. 3666.61

2<sup>1</sup>/<sub>2</sub>Recapitulation6<sup>1</sup>/<sub>2</sub>

\$	13629679	<u>Plant</u>	
		<u>Capital Account</u>	13666661
	232259	<u>Cash Account</u>	
		<u>Sundry Creditors</u>	7348305
	4206993	<u>Expenses</u>	
		Shop Expenses *23847.57	
		Extra Expenses 18222.36	
		<u>Profit &amp; Loss</u>	238234
	3184269	<u>Sundry Debtors</u>	
		Balance due on account of work 22789.73	
		Amount due from sundry debtors 9052.96	
\$	21253200		\$ 21253200

From the foregoing exhibit it will be seen that our total running expenses to date have been \*23847.57. We may apply towards reducing this amount, the credit to Profit & Loss account viz. 2382.34, we will then have our expenses reduced to \$11465.23. The total cost of work to date is \$68936.43, and since our expenses must be covered by the cost of our work we should add \$68936.43 and \$11465.23 together, making a total cost of \$80401.66. We have been paid on account of this \$46146.70 leaving still due us \$34254.96 & there is also owed

[ENCLOSURE]

us. by Sandra Dalton \$952.96,  
adding these amounts together  
we have altogether owed us  
\$5307.92.

Now we have an item of  
Extra expense of \$8222.36 to  
be disposed of in some manner.  
This to all intents and purposes  
is a cost of plant and may  
well be added to that account.  
We would then have our plant  
costing \$154519.15.

Our Capital now is \$56666.60  
and it would owe plant \$7822.36.  
This of course would be paid in,  
and we would then have in  
finder, collecting the amount  
above mentioned as owed  
us, viz: \$5307.92 a total of  
\$4060.46 to apply to the  
payment of what we owe  
which, together with the cash  
on hand, will be seen, would  
exactly cancel that  
obligation.

We now have cleared off all  
our accounts, leaving only  
our plant at \$154519.15 and  
a corresponding amount of  
Capital to offset it. It is true  
we have no profit left, We  
have come out just even. But  
when it is remembered  
what we have encountered  
since the start, we ought  
certainly next year, to show  
a handsome return.

*7012*  
*Preliminary*  
*Statement*  
—

*Edison Machine Works*  
—

*Nov. 1/81*  
—



Machinists' Tools  
AND  
**MACHINERY**  
OF EVERY DESCRIPTION.

—PATENT—  
Cold Rolled Shafting,  
Couplings, Pulleys,  
**SELF OILING HANGERS**

Turned Emery Wheels & Back's,

**BELTING, &c.**

P. O. Box 4499.

Established 1856.

OFFICE OF

# The George Place Machinery Agency,

121 CHAMBERS & 103 READE STREETS,

New York, Nov 23 1881

Mr. Thomas A. Edison  
New City

We hereby agree that in case  
you make such request to renew  
one half of each of the four notes  
received from you thereby at their  
maturity.

Yours truly

THE GEORGE PLACE MACHINERY AGENCY.

Linn

New York Nov 23 1881

**RECEIVED** from Thomas A. Edison

and dated Nov. 24th

in pay of Edison Machine & Co. to that date

THE GEORGE PLACE MACHINERY AGENCY.

Linn

HAYWARD, PERRY & FRANKLYN,  
CUSTOM HOUSE BROKERS AND FORWARDING AGENTS,  
Average Adjusters and Insurance Brokers,  
AGENTS FOR UNDERWRITERS IN CHINA, BOMBAY, JAVA & ROTTERDAM,  
NOTARIES, (Notaries for Hanover Bank)  
No. 54 WALL STREET.

*New York, 6 Dec. 1881*

My dear Eschell

Inclosed you have as  
good rates as I can get  
just now, but please bear  
in mind that these rates  
are open to a change -

Sincerely  
Yours sincerely

R. Franklyn

[ENCLOSURE]

P. O. Box 3791.

*File  
Machine works  
for Mr. Insult*

HAYWARD, PERRY & FRANKLYN,

HAYWARD & PERRY

Average Adjusters and Insurance Brokers.

AGENTS FOR UNDERWRITERS IN CHINA, BOMBAY, JAVA & ROTTERDAM.

CUSTOM HOUSE BROKERS & FORWARDING AGENTS.

NOTARIES, (Licenses for Manzanillo, Mex.)

~~New York~~ ~~NEW YORK~~

64 WALL STREET.

New York, 27 Nov 1881

Rates on light machinery to the following ports  
Hankow . . . . . marks 60 per cubic foot  
Bombay . . . . . 50% & 10% per national line

Malabar

Sydney

Adelaide

London

Cuba

1/2 cent per lb prices under 2000

over 2000 to 5000 3/4 cents per lb

The above rates are given only for a fortnight or 3 weeks  
but the rates would not likely change very much if at  
all. And the above only applies to machinery weighing  
under two tons & if there is room in the ships -

OFFICE OF  
Edison Machine Works,  
104 Goerck Street,

New York, Dec. 12<sup>d</sup> 1881.

My dear Mr. Edison,

I tried to get a  
chance to speak to you when you left  
for the Parks, but Dean kept too near  
us.

I want to ask you and Mrs. S.  
very earnestly not to fail to come to  
my wedding, Wednesday evening next.  
Now don't say no or let any thing

keep you away. I would do any  
thing in this world to have you there,  
and now you must come.

Take the 5.30 train  
from Liberty St. and we will meet  
you at Plainfield. We will come  
back to N. Y. with you same  
evening.

Please wire me or receipt  
of this that you will come.

OFFICE OF  
Edison Machine Works,  
104 Goerck Street,

New York, \_\_\_\_\_ 188

I would like to have a leave of absence  
granted me for about a week to visit  
Chicago, and will have every thing  
here go along all right while I am  
away.

I am, Yours faith fully,

Charles Roepp

which have been claimed to be the sender of the following message.  
The company will not hold itself liable for errors or delays in transmission or delivery of telegrams.  
This message is an UNRECORDED MESSAGE and is delivered by request of the sender, under  
the conditions stated above.  
A. R. BROWN, Sec'y. 2 • NORVIN GREEN, President.

Dated New York 11 1881

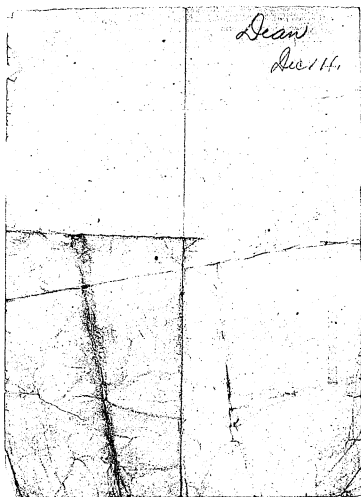
Received at Mount Park Depot  
St. Thos & Edison

READ THE NOTICE AT THE TOP.

The machine that I was  
to ship you today does  
not work right it chokes  
in the field will experiment  
on it further.

6 L Dean

23 paid  $\frac{w}{E}$  927 am



Machinists' Tools  
AND  
**MACHINERY**  
OF EVERY DESCRIPTION.

-PATENT-  
Cold Rolled Shafting,  
Couplings, Pulleys,  
**SELF OILING HANGERS**

Tanite Bury Wheels & Mch's,

**WELTING, & CO.**

P. O. Box 4499.

Established 1855.

OFFICE OF

# The George Place Machinery Agency,

121 CHAMBERS & 103 READE STREETS,

New York, Dec 23 1881

Mr Saml Insull

Dear Sir

N.Y. City

It is too late to withdraw that  
note, you <sup>will</sup> remember that in case you decide  
against you now to let a known several  
days beforehand, for the New York is any  
will be away tomorrow & you must  
wishes in some way not allow the note to  
go to protest tomorrow, we can make  
some arrangement with you to furnish the  
balance of the money right after Christmas  
but it is too late now to recall the note, ~~you~~  
must meet the note tomorrow it could  
not do to allow it to go to protest.

There would have been no trouble  
if you had advised us even as late as yesterday.  
I will be at your office tomorrow  
morning at half past eight o'clock  
from New York.

THE GEORGE PLACE MACHINERY AGENCY.

If Mr. P.B. was going to be here we might be able to arrange it  
but his absence makes that impossible & you must know the money  
will be away tomorrow.

MEMORANDUM.

From the *W. L.* **CREDIT LYONNAIS,**  
(Equitable Building) 120 Broadway.

To *J. A. Edman Esq*

New York, *24/5/11*, 1881

*By L. J. L.*

*As ordered by our Paris-Branch  
to pay you for Monsieur Corlan -  
Please find an cheque herewith for  
that amount return to us enclosed  
Receipt duly signed.*



Mr. Miller

Dear Sir

Enclosed please find bill  
belonging to Edison Machine Works  
please send to them I have changed  
it to New York Books

Very truly  
J. P. Handolph

Memo Book held 5th 1881

Edison Machine Works

To J. A. Edison

LDL

1881			
June 6	To 9 7/8 lbs copier bars for commutation	35	3 34
" 6	" 30 lbs Purple covered copier wire	35	16 50
" 7	" 14 lbs covered No 10 "	50	7 00
" 16	" 396 lbs No 10 wire	35	138 60
" 16	" Cartage		3 00
Aug 1	" Pay Roll Moving Machy to depot		51 40
"	" Cartage		75
Oct 13	" Pay Roll getting out wire		3 07
" 13	" 675 lbs No 10 wire order No 22056	35	336 25
" 16	" Cartage		50
Nov 1	" Pay Roll Packing down Mach. Btting		5 32
			465 73

E. P. Hampson

91. Liberty St.

N.Y. C

Want to try an experiment  
with one your five Horsepower  
Verticals with governor  
can you ship me one. Will  
return in five days

Edison

E. P. Hampson

91. Liberty St

Would rather have  
the fast Engine over  
at instant answer  
immediately

Copy

Edison

Electric Light Co. Goods sent to the  
Supply department N.Y.

1/2 doz.	3x5 1/2 shades.	448	5 <sup>75</sup> / <sub>100</sub>	2.88
1/2 "	" " " "	462	5 <sup>-</sup>	2.50
1/4 "	4x7 1/2 " "	5 <sup>66</sup>	Blue Res 12 <sup>50</sup>	3.00
1/4 "	2x5 1/2 " "	448	8 <sup>00</sup>	2.00
1/2 "	4x7 Globes Blue of as		15 <sup>00</sup>	7.50
1/2 "	3 1/2 x 7 1/2 " "	6811	39 <sup>00</sup>	19.50
1/2 "	2 1/2 x 8 " "	6811 1/2	27 <sup>00</sup>	13.50
1/2 "	2 1/2 x 8 " "	6808	22 <sup>50</sup>	11.25
1/2 "	" " " "	6798 <sup>44</sup>	9 <sup>50</sup>	4.75
1/2 "	" " " " flint Egypt		9 <sup>50</sup>	4.75
1/2 "	2 1/2 x 7 " "	6810 1/2	13 <sup>50</sup>	<del>6.75</del>
1/2 "	4 x 7 Shades cut pecked		12 <sup>00</sup>	6.00
1/2 "	" " " " Pan		10 <sup>00</sup>	5.00
1/3 "	3 1/4 x 6 Globes flint 695	7 <sup>50</sup>		2.50
1/3 "	4 x 8 shades 6836 1/2 flint 9 <sup>50</sup>			3.16
1/2 "	5 x 7 1/2 " egg oval		4 <sup>00</sup>	2.00
5	cuts shades		7 <sup>50</sup>	3.13
1	2 1/2 x 8 shades oval shape		13 <sup>00</sup>	1.00
1	10 inch cones	6799 flint	22 <sup>00</sup>	1.83
1	" " " "	6798 " "	23 <sup>00</sup>	1.83
1	" " " "	6798 " "	40 <sup>00</sup>	3.34
6	5 x 7 1/2 Globes 1029 agmt		10 <sup>00</sup>	5.00
8	4 x 7 1/2 " flint Regular		7 <sup>50</sup>	5.00
1	10 in see lamp			15.00
1	7 " 5 R lamps Vienna			5.00
1	3 1/2 x 7 see Globes		12 <sup>00</sup>	2.00
1	" " " "			6.00
1	Lantern Silver Res 20 47			99.00

132.67

Wm. Garman

Electric Light Co. goods to 65 Fifth Ave

2 dynamoes 200. 400.

4 Extra brushes 50. 200.

\$402.00

Wm. Garrison

Electric Light goods to 65 Fifth Ave

2 dynamoes 200. 400.

4 Extra brushes 50. 200.

\$402.00

Wm. Garrison

Electric Light Co. Goods sent to the  
Supply department Ref.

1/2 doz	2 x 5 1/2	shades.	448.	5 1/2	2.88	
1/2	"	"	462	5 1/2	2.50	
1/4	4 x 7 1/2	"	566.	8 in B.J.	3.00	
1/4	2 x 5 1/2	"	448	8	2.00	
1/2	4 x 7	Shades	Ram shade	15	7.50	
1/2	2 1/2 x 7 1/2	"	68 1/2	39	19.50	
1/2	3 1/2 x 8	"	68 1/2	27	13.50	
1/2	3 1/2 x 8	"	68 1/2	22	11.25	
1/2	"	"	67 1/2	9	4.75	
1/2	"	"	for Egypt	9	4.75	
1/2	3 1/2 x 7	"	flint 68 1/2	13	6.75	
1/2	4 x 7	shades	cut doublet	12	6.00	
1/2	"	"	ham	10	5.00	
1/8	3 1/4 x 6	Shades	flint 67 1/2	7	2.50	
1/8	4 x 8	Shades	68 1/2	flint 9	3.16	
1/2	5 x 7 1/2	"	egg oval	4	2.00	
5	"	cut shades	7	3.13		
1	2 1/2 x 8	shades	cone shape	12	1.00	
1	10 in	cone	67 1/2 flint	22	1.83	
1	"	"	67 1/2	22	1.83	
1	"	"	69 1/2	Ram	40	3.34
6	5 x 7 1/2	Shades	1029 agent	10	5.00	
8	4 x 7 1/2	"	flint Register	7	5.00	
1	10 in	hlec cone	"	"	1.50	
1	1/2 in	R.R. Home	Vienna	"	.50	
2	2 1/2 x 4	hlec Electric	at 1	"	2.00	
1	"	"	"	"	.60	
	2 in diam	Shades	20 1/2	"	9.90	

Wm. Lamm

133.67

Goods of T. A. Edison	
Sent to Edison Machine Co	
one Ames Lathe	200.
" Stewart "	100.
2. 20 ohm resistors 6	12.
	<u>\$ 312.00</u>

W. Gamm

Electric Light Co. goods sent to the  
Supply department N.Y.

The Dean can give an account of the  
tools taken by him of which I have no ac<sup>t</sup>

19 1/2 Ht. Drive 50 9.75

2 Dynamoes 200 400.00

6 Resistance Boxes 2 of 3 25¢ 30  
4 " 1 " 25¢ 100 180

Pd for m<sup>ch</sup>

Hampson Engine complete

2. 20 in pulleys 5 in face 5.89 11.78

1 1/2 in. Lobe Valve 2.65

Bu<sup>y</sup> 7/4

48 Bergman Brackets

5 Chandeliers 2 Burners each 2.25 11.25

20 ft 2 in Steam Pipe 3 6.20

35 " 1 1/2 " " 22 7.70

107 " 1/4 " " 6 6.00

60 " Lamps 1 60.00

517.83

W. Larnum

Electric Light Co. goods sent to the  
Supply Department

160 items can give us of Tools taken by  
him of which I have no account

1 1/2 ft. Fibre 50. 9.75

2 Dynamometers 200 400.00

6 Resistance boxes 2 of 8 ohms 1.80

Performance 1. Hampson Engine complete

2. 20 inch pulley 5 in face 5-13 11.75

1 1/2 inch Globe Valve 2.65

Air One 48 Bergmann Brackets

5 Rehandels 2 brass each 2.25 11.25

20 ft 2 in steam pipe 31 6.20

35 " 1 1/2 " " " 22 7.70

100 " 1/4 " " " 6 6.00

60 Lamps 1 6.00

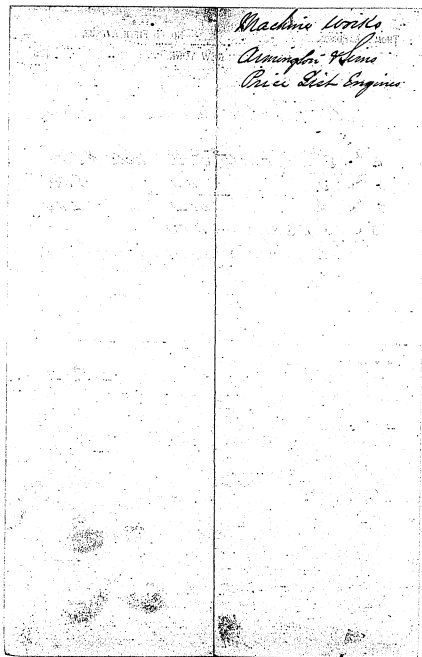
517.13

Wm. Garman



*Armington & Sons Engine*

6<sup>2</sup> x 8 cost \$500. sell \$650  
8<sup>2</sup> x 10 " 700 " 850  
9<sup>2</sup> x 12 " 1000 " 1200  
13 x 13 C.S. Eng. 1650  
in lots of 10 Engine of each size



**1881. Electric Light - Electric Tube Company (D-81-030)**

This folder contains correspondence relating to the establishment and operation of the Electric Tube Company, New York City. Formed in 1881, the company supplied underground conductors for the Edison electric light system. Under the direction of John Kruesi, treasurer, the company furnished conductors for the Pearl Street central station of the Edison Electric Illuminating Company of New York.

All the documents have been filmed.

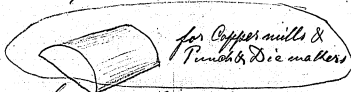
The Edison Electric Light Company,

65 Fifth Avenue,

Horatio Green, Pres.  
S. B. Eaton, Vice-Pres.  
E. H. Feltz, Treas.  
C. Gooddell, Secy.

New York, April 1<sup>st</sup> 1881

My figures was perfectly  
correct as to the area and  
as you did not suggest anything,  
nor find faults on  
I go ahead with it.  
I take the liberty to have  
a model made at your  
shop at Menlo.



for Copper mills &  
Punch & Die makers

Should you object to this plan  
Telegraph Logan not to make  
it

Respectfully Yours  
J. H. P. Green

ANTHONY J. THOMAS,

DREXEL BUILDING,

P. O. ADDRESS, PHILADELPHIA.

New York, April 9, 1887.

Calvin Goodland &  
65 Ave 5

Dear Sir,  
Enclosed I hand  
Certified Copy

Certificate of Incorporation  
Electric Tube Co.

Mr. White and I  
can meet you some  
evening next week to  
organize.

Yours truly  
Anthony Thomas

JAE.

ANTHONY J. THOMAS,

DREXEL BUILDING

P. O. ADDRESS, BOX 1119,  
N. Y.

New York, April 22, 1881

Thomas A. Edison &  
President  
Edison Electric Tube Co.

Dear Sir

Enclosed a letter  
from Messrs Porter, Lowrey,  
Soren & Stone respecting  
the legal points in question  
last evening.

Kindly be careful  
to have stock issued in  
name of each Trustee, 5-  
shares each would be  
sufficient. Truly  
Anthony J. Thomas

C. Deane  
Lube Co.

A. J. Thomas

with letter

from

Porter Lowrey

Apr 22<sup>nd</sup> 81

[ENCLOSURE]

John F. Rogers  
Secretary, Edison  
Gen. Walter Stern.  
Chas. Francis Stone.  
Geo. S. Hamilton.  
Wm. L. Porter.

P. O. Box 1836.

*Porter, Lowrey, Loomis & Stone*  
*Attorneys & Counsellors at Law*  
*No. 3 Broad St. New York.*

April 22nd 1881

18

Edison Electric Tube Company:---

Dear Sir:--

(1) It is not necessary to file copy of your by-laws with Secretary of State, nor any other papers at present.

(2) The trustees or directors must all be stockholders and citizens of the United States, and a majority of them must be citizens of this State.

Referring to your certificate, which names the trustees for the first year, I find that Messrs Thomas, Clarke and White are citizens of this State. The only thing to be attended to, is to take care that all the trustees shall be stockholders.

(3) If you will let us see the minutes of the proceedings thus far, we will advise you whether they are regular.

Has the capital been fully paid?

Yours truly,

*Phil. H. Stone*

Thomas A. Edison, Esq.,  
 65 Fifth Avenue,  
 New York City.  
 Dear Sir:--  
 At a meet-  
 ing held on the 21st inst.

Thomas A. Edison Esq.,  
65 Fifth Avenue, City.

Dear Sir:--

At a meeting of the Trustees of the above Company

"That a call of thirty per cent be immediately made

In pursuance with the above: kindly send me cheque

Yours truly,  
Samuel Insull  
Secretary

**Secretary.**



Dracel, Morgan & Co

P.O. Box 3036.

New York April 28 1881

Saml Insull Esq  
Electric Tube Company  
65 Fifth Ave

Dear Sir,

Will you be  
kind enough to inform  
me, on behalf of  
Messrs. Morgan and  
myself, how you  
make out interest  
in your company  
30 shares each - and  
oblige yourself truly

J. Wood Wright

Electric Tube  
Company

April 28th

J. Wood Wright

re

The Electric Tube Company,

65 Washington St.

T. A. EDISON, Pres.  
JOHN KIRKES, Treas.  
SAMUEL INSALL, Sec'y.

New York, *May 5th*, 1881

*John Randolph  
Mendenhall*

*Johnny find  
the Queen's Catalogue  
for me Mr. Edison  
says it contains descrip-  
tive notes of Hydrogen  
gas etc. and leave it  
with Francis Juhl*

*J. Kruesi*

The Electric Tube Company.

65 Washington St.

T. A. EDISON, Pres.  
JOHN KIRKES, Treas.  
SAMUEL INSALL, Sec'y.

New York, *May 10th*, 1881

*T. A. Edison Esq.*

*Dear Sir  
Please find  
enclosed check for \$2,000.00  
and a bill in sending  
your receipt*

*Truly Yours*

*J. Kruesi*

$$\begin{array}{r} 792.49 \\ 790.08 \\ \hline 82.41 \end{array}$$

$$\begin{array}{r} 30 \\ 82 \\ \hline 52 \\ 52 \\ \hline 28 \\ 44 \\ \hline 52 \\ 44 \\ \hline 87 \\ 26 \end{array}$$

$$\begin{array}{r} 76 \\ 109 \\ 116 \\ 80 \\ 247 \\ \hline 57 \\ 28 \\ 91 \\ 86 \\ 40 \\ 14 \end{array}$$

$$\begin{array}{r} 31- \\ 229 \\ 229 \\ 38 \\ 12 \\ \hline 818558 \\ 7140124 \\ \hline 784345 \\ 74249 \end{array}$$

$$\begin{array}{r} 49 \\ 42 \\ \hline 57 \\ 36 \end{array}$$

8185.58

$$\begin{array}{r} 24 \\ 17 \\ 13 \\ 22 \\ 55 \\ 100 \\ 209 \end{array}$$

The Tube Works  
 May 10. 81  
 Kreni

ANTHONY J. THOMAS,

DREXEL BUILDING,

P. O. ADDRESS, BOX 2951,  
N. Y.

New York, May 10, 1881

Samuel Insull &  
Secty

Dear Sir

What has been  
done about having some  
of the Tube Company  
Stock in name of Trustees

It is necessary that it  
should be done, Mr  
White's and my own  
came out of our own  
share, Mr. J. H. Wright's

I presume

Don't the Treasurers Books  
show any payments on  
account of Stock in  
Trustees names, if not they must

Mr. Edison will have  
to provide Mr. Clark's share.

I have been up to see  
you about this matter  
twice, but both evenings  
you were out, or at least  
could not be found

Yours truly  
Anthony Thomas

The Electric Tube Company,

Washington St.

New York, <sup>10</sup> June 1881

T. A. EDISON, Pres.  
JOHN KRUESI, Treas.  
SAMUEL INSULL, Sec'y.

36 Amory Place  
New York, N.Y.  
July 13, 1881  
Dear Sir,  
I have the honor to acknowledge the receipt of your letter of the 10th inst. in relation to the certificate of incorporation of the Electric Tube Company and as such I am one of the directors. As it would probably cause you considerable trouble to attend to this business I would not be as well to have to hand your resignation. By letting me have an answer at once you will greatly oblige yours truly,  
John Kruesi, Treasurer

The Electric Tube Company,

65 Fifth Avenue,

T. A. EDISON, Pres.  
JOHN KRUESI, Treas.  
SAMUEL INSULL, Sec'y.

New York, JUNE 13TH, 1881.

T. A. EDISON, ESQ.

65 FIFTH AVE. N. Y. CITY.

DEAR SIR:-

I AM DIRECTED BY THE PRESIDENT TO MAKE  
A CALL OF FIFTY-50-PER CENT UPON THE STOCKHOLDERS.  
I SHALL, THEREFORE, BE GLAD IF YOU SEND ME A CHECK  
TO THE ORDER OF THE TREASURER OF THE ELECTRIC TUBE  
COMPANY FOR FIFTEEN HUNDRED DOLLARS BEING FIFTY  
PER CENT OF THREE THOUSAND DOLLARS, THE AMOUNT OF  
YOUR INTEREST IN THE COMPANY.

RESPECTFULLY,

Sam'l Insull  
SECRETARY.

#7

July 20<sup>th</sup> 86

E. Insull Esq.

The Estimate I gave  
you about June 24<sup>th</sup> 85  
is as near correct as I  
can make it.

I shall send a bill for  
every shipment that I  
make.

One shipment is gone and  
bill sent to Rogers Eaton  
and about 10000

One will go tomorrow. . . 80000

next week with Eng.  
Amount 15000

\$1010.00

If you can get \$1200. or 1300.  
advise you will oblige.

#2

Also an advance of  
\$3000<sup>00</sup> on finished stock  
on hand ready for the  
Company Disposal.  
I have a bill of \$3  
Public <sup>works</sup> ~~works~~ besides the  
Paris order which costs  
us \$4000.00

Please attend to  
this and oblige yours

J. Krueger

P. Should be followed to  
see at the works.  
H.

#1  
S. Inoull Confidential  
Cost per foot of #3 Tube  
12¢  
Cost of a device for complete  
3 2.80

J. Krueger

The Electric Tube Company.

65 Washington St.

T. A. EDISON, Pres.  
JOHN KRUESI, Treas.  
SAMUEL INSULL, Secy.

New York. Aug. 15<sup>th</sup> 1881.

S. Insull Esq.

Dear Sir,  
The Prices for our Electric Tubes are as follows.

No 3.	2 Conductors of 262951	Per. mile each in length of 20 ft.	150
" 4.		182884	150
" 5.	" " 102889	" " " from 15 to 17 ft	45
" 6.	" " 66581	" " " " " " " " " "	32
" 7.	" " 33015	" " " " " " " " " "	25

Insulating Tape in widths as follows.

3/4" 1" 1 1/2" - kept in stock at 40¢ per ft.  
Other widths made to order.

Truly Yours  
John Kruesi  
Treas.



The Electric Tube Company.

65 Washington St.

T. A. EDISON, Pres.  
JOHN KRUES, Treas.  
SAMUEL INSULL, Sec'y.

New York, Aug. 18<sup>th</sup> 1881

Dear Mr. Insull

I send you herewith  
Sample Tubes Nos 3, 5, 6, 7.

" Tape  $\frac{3}{4}$  inch &  $1\frac{1}{2}$  inch price 40¢  
for the Edison Electric Light Co. <sup>Patents</sup>  
50¢ per pound to outside. ~~foreign~~

Sample of Insulating Compound  
12 lb. per lb.

For large orders a liberal  
discount may be allowed.

Truly yours

J. Krues

*the 12 lb. tube is for  
for underground use  
is for the same use  
which is used for  
underground*

(X) #  
Aug. 26<sup>th</sup> 81  
Mr. Insull

Please Tell Mr. Edison

The large cable contains  
96 wires. Has 3 layers  
of tape outside & in order  
to get 96 wires in I had  
to put between the the  
layers same tape to increase  
the diameters. I intend to  
cut these cables & give Mr. E.  
1 & Mr. White the other piece.  
Please return them at  
your earliest convenience  
& oblige yours truly

J. Brown  
J. Brown



The Electric Tube Company.

65 Washington St.

T. A. EDISON, Pres.  
JOHN KRUESI, Treas.  
SAMUEL INSULL, Sec'y.

New York, Aug 22 1881

T. A. Edison Esq.

My dear Sir.

I have made the experiment to  
day to put two # 20 app. wires  
in a tank, & succeeded.

The insulation is perfect,  
The additional labor comparatively  
very small. The wires are pushed  
through small holes in the washers &  
the washers

put somewhat closer than  
usual which keeps them in  
good position. Will make  
cables as soon as possible.

Have much trouble to get upper castings  
Davis can't do it.

Truly Yours  
J. Kruesi

The Electric Tube Company,

65 Washington St.

J. EDISON, Pres.  
JOHN KIRKES, Treas.  
SAMUEL INSEALL, Sec'y.

New York, Sept 2 1881

Samuel Inseall Esq,  
Secy. of The Electric Tube Co.

Dear Sir,

The price of electric tubing #14  
2 conductors of 182884 C.W. each in length of  
15 to 17 ft of 55¢ per foot.

In making #5 we found so much dif-  
ficulty, as to make take us making a larger  
tube; the cost is consequently increased &  
will be 45¢ instead of 40¢ per foot.

Yours truly

THE ELECTRIC TUBE CO.

J. Inseall

The Electric Tube Company,

65 Washington St.

T. A. EDISON, Pres.  
JOHN KRUESI, Treas.  
SAMUEL INGLIS, Sec'y

New York, *Oct 1*

1887

*Samuel Inglis Esq*  
*65 5th Ave*

*Dear Sir. Please have Mr  
Edison sign these checks  
& send them down as  
soon as possible*

*If you could come down  
for a few minutes to day  
you would greatly oblige  
Yours respectfully*

*Washington Glavin*

The Electric Tube Company,

65 Washington St.

T. A. EDISON, Pres.  
JOHN KRUESI, Treas.  
SAMUEL INGLIS, Sec'y

New York, *Oct 6*

1887

*Dear Mr. Inglis. The Ansonia  
Brass & Copper Co. is on account  
of heavy payments they have  
to make very much in need  
of \$6580 which is due them  
from us. I sent them word  
that I was trying to get the  
money this week. Please help  
me out of this pinch by getting  
the above \$6580 somehow &  
oblige*

*Yours truly*  
*John Kruesi*  
*Secy.*

*If he will turn out about \$2000-  
worth of goods, but use this amount  
for paying the other bills.*

The Electric Tube Company,

65 Washington St.

T. A. EDISON, Pres.  
JOHN HUBBS, Treas.  
SAMUEL INSULL, Secy.

New York, *Oct. 9<sup>th</sup>* 188*1*

*Please send me an answer by letter*  
Dear Mr. Insull  
I spoke to Mr. Edison today about  
Money and suggested to make another  
assessment on The Tube Co stock together  
about \$5000<sup>00</sup> This I think would  
do as well as over the difficulties.  
Mr. Edison is satisfied.  
Have you seen Mr. Cowles?  
If not I shall go there first thing  
tomorrow I get your answer & explain  
him how it is. Should he not be  
satisfied will offer him interest  
for 30 days what do you think  
about?

Please pay the matter your  
prompt attention &  
oblige yours truly

*Refund enclosed*  
Check 100 <sup>00</sup>/<sub>100</sub>  
Thanks.

*J. Hubbs*

The Electric Tube Company,

65 Washington St.

T. A. EDISON, Pres.  
JOHN HUBBS, Treas.  
SAMUEL INSULL, Secy.

New York, *October 30* 188*1*

Samuel Insull Esq  
Secy of The Electric Tube Co

Dear Sir

Enclosed find  
check (16<sup>00</sup>/<sub>100</sub>) in payment  
of bill of Ayer & Wilber.  
Please return bill when  
received.

*Yours respectfully*

THE ELECTRIC TUBE CO.

*J. H.*

P.S. Also send you two checks  
which please have Mr. Edison  
sign.

*J. H.*

*File*  
T. A. EDISON, P.M.A.  
JOHN HIGGINS, Jr., Secy.  
MARVEL INSURANCE, Secy.

The Electric Tube Company,

65 Washington St.

New York *Oct 28/86* 1886

*Wrote to Mr. Edison  
Oct 28/86*

Mr. Edison

In spite of all my urging by  
Telegraph and mail. The Foundry  
did not supply me with the  
necessary upper castings for Governor  
forints. So that if we make  
a 1000 feet tonight we are  
completely stopped. I can't  
make them to cast more. Have  
ordered them yesterday to return the  
patterns. Have Paddy also.  
I fear though that we will have  
trouble right along unless we  
can make them a lower grade  
of composition say 85% instead  
of 96% so that Aring Foundry  
can make them.

Please suggest or advise  
me *John W. Stager*

EDWIN H. LEWIS, FRANKLIN B. GOWEN, STEPHEN A. CALDWELL, RECEIVERS OF THE  
PHILADELPHIA & READING RAILROAD COMPANY.

O. W. STAGER  
Supt. P. & R. P. T. Co.

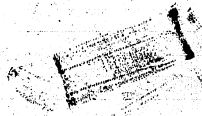
Reading, Pa. *Oct 29* 1886

The Edison Tube Co.  
(New York)

Sir:  
Please quote price per pound  
of covered wire of which I enclose  
sample. How many feet to the  
pound does it run?

Also please give me price of  
enclosed gum cloth per roll  
and how much is contained in  
a roll. By so doing you will  
oblige.

Yours respy  
*W. Stager*  
Supt. Telegraph





The Electric Tube Company,

65 Washington St.

T. A. EDISON, Pres.  
JOHN KRUESI, Treas.  
SAMUEL INGRAM, Secy.

New York, Nov 11 1881

T. A. Edison Esq  
65 5th Avenue City  
New York

Have now made  
such arrangements with Edison  
that in case we could not have  
the locomotive headlight, we  
could return it -

We do not see it & would  
like to return it if we can.

Yours truly  
John Kruesi

No But I think I will be  
able to take it off your  
hands

IRON AND STEEL WIRE ROPE,

WIRE ROPE,

WIRE SHIP RIGGING.

N. J. WIRE CLOTH CO.

The John J. Goebbling's Sons Co.

CHARLES G. GOEBBLING,

FRANK W. GOEBBLING,

Pres't.

Secy and Treas.

Patent, N. J., Nov. 16 1881

Thomas A. Edison Esq.  
New York.

Dear Sir,

Will send all the  
rest of the samples to morrow.

Very respectfully  
J. J. Goebbling

The Electric Tube Company,

65 Washington St.

T. A. EDISON, Pres.  
JOHN KILGUS, Treas.  
SAMUEL INSULL, Secy.

New York, Nov 21 1881

Samuel Insull Esq.  
Secy of the Electric Tube Co.  
65-5th Avenue

Dear Sir: Enclosed please find checks  
for Mr Edison's acct. (attached).

# 194	Union Machine & Tool Co.	for work on joints	508 <sup>00</sup> / <sub>100</sub>
# 195	E. B. Duck & Co.	" " " " " " " "	146 <sup>00</sup> / <sub>100</sub>
# 196	Seymour & Whitlock	1 bending machine	76 <sup>00</sup> / <sub>100</sub>
# 197	G. S. Woolman	Hydrogen gas cylinders	52 <sup>00</sup> / <sub>100</sub>
# 198	E. P. Bullard	2 grinders	130 <sup>00</sup> / <sub>100</sub>
# 199	Smith & Rindgen	Gasometer	112 <sup>00</sup> / <sub>100</sub>
# 200	J. H. DeGauw	Rent of cellar	15 <sup>00</sup> / <sub>100</sub>
# 201	John Kausse	Pay roll & Petty cash	900 <sup>00</sup> / <sub>100</sub>
# 202	John Kausse	Petty Cash	100 <sup>00</sup> / <sub>100</sub>
# 203	Union Machine & Tool Co.	Copper rods	3000 <sup>00</sup> / <sub>100</sub>

Please return same as soon possible

Enclosed find a letter for you

Yours truly,  
T. A. Edison  
The Electric Tube Co.

The Electric Tube Company.

65 Washington St.

T. A. EDISON, Pres.  
JOHN KRUESI, Treas.  
SAMUEL INGRAM, Secy.

New York

November 27, 1887

Samuel Insull Esq  
Secy of the Electric Tube Co

Dear Sir,

On June 16 1887 Mr  
Edison had some copper casting  
made ordered by me to be  
sent to Menlo Park.

The bill (\$2130.00) was sent  
in in due time but no  
notice was taken of it. please  
look into it & oblige

Sincerely  
John Kruesi  
J.K.

Wmto Kruesi. I am sure  
will see to it when next  
at Menlo - yours John Kruesi

The Electric Tube Company.

65, Washington St.

T. A. EDISON, Pres.  
JOHN KRUESI, Treas.  
SAMUEL HOSKINS, Sec'y.

New York, Dec 14 1881

Mr Edison  
Dear Sir,

Please sign the enclosed checks  
to Ross also for coal, H. Wilson for copper castings  
Also approve bills for material shipped to Johnson,  
See Russell, Morgan & Co's letter. & return by mail as  
soon as possible.

I am all right again, & will try to lay a Feeder  
on Wall street on Friday. I am sure though the  
best way would be to wait until we get the  
safety catch brace & every thing to make one job  
of it. But there is nothing like trying it as you  
say

Truly yours  
John Kruesi  
J.K.

The Electric Tube Company.

65 Washington St.

T. A. EDISON, Pres.  
JOHN KRUESI, Treas.  
SAMUEL INSULL, Sec'y.

New York, *December 15*, 188*1*

*Samuel Insull Esq*  
*65-5th Avenue City*

*Dear Sir,* Please have Mr Edison approve  
*enclosed bill & return same as soon as possible*

*Yours truly*

*J. E.*

The Electric Tube Company.

18 to 24 Bridge St.

T. A. EDISON, Pres.  
JOHN KIRKUL, Treas.  
SAMUEL INGLIS, Secy.

Brooklyn, N. Y.,

Dec. 16 1884

Am. Enall & Co.  
65-54 Ave  
N.Y.

Dear Sir:

Responding to your  
favor of to-day:-

Our balance against the  
Edison Electric Light Co. is the old  
and often referred to claim of \$639.09.

The indebtedness of the Ed.

Co. of N.Y. to date is as follows:

Dec. 1 - B. balance \$710.39

" 11 - All paid out 102.53

\$812.91

being the balance according to our  
books & from which it will be an

The Electric Tube Company.

18 to 24 Bridge St.

T. A. EDISON, Pres.  
JOHN KRUEER, Treas.  
SAMUEL INSULL, Secy.

Brooklyn, N. Y., ..... 188

easy matter for Mr. Ohlin to  
tell you the actual difference  
in our accounts. You  
would do us a great favor by  
endeavoring to straighten this  
discrepancy before we close  
our books at the end of this  
month.

*Truly*  
ELECTRIC TUBE CO.  
*John Krueer* TREASURER.

*File*  
T. A. COBURN, Pres.  
JOHN R. RUESEL, Treas.  
SAMUEL INSULL, Sec'y.

The Electric Tube Company,

65 Washington St.

New York, *Dec 19* 1881

*Mr Edison*  
*Dear Sir*

*Please sign these*  
*checks. # 225 is already paid*  
*it was last Saturday a week*  
*when you was at mine. My*  
*flight gave me the money for*  
*pay roll. In future I will make*  
*out checks 3 or 4 days ahead*  
*so that this does not occur again*

*Please let me know when I*  
*can see you to night, will you*  
*be in New York*

*Truly yours*

*John Insull*



PHOSPHOR-BRONZE  
CASTINGS.

JOHN DAVENPORT, PRES.

Geo. F. Treacy, Sec'y.

Wm. P. Jones, Sec'y.

THE DAVENPORT & TREACY COMPANY, \*

**Iron and Brass Founders,**

HANGER AND PULLEY CASTINGS OF ALL SIZES,  
Foundry, Cor. Grove & 11th Sts., Jersey City, N. J.

Jersey City, Dec 18 1881

Mr. Knicker

Dear Sir  
Last June we made on your  
order some Copper Castings for  
Mr. J. A. Edison and shipped  
them to him at Menlo Park.  
Since then we have sent several  
statements to him but have never  
been able to collect it. as we  
do not know Mr. Edison in  
the matter we shall have to  
go for payment. He has  
paid 6 francs and does not  
propose to wait any longer,  
the amt is small and should  
have been paid long ago

please at John R. at once  
or we will be obliged to place  
it in the hands of our atty  
for collection.

Respectfully,  
THE DAVENPORT AND TREACY  
COMPANY.  
J. R. Davenport

**1881. Electric Light - Foreign - General (D-81-031)**

This folder contains correspondence, agreements, and other documents relating to the establishment of electric lighting systems in foreign countries.

All the documents have been filmed.

FABBRI & CHAUNCEY  
P.O. BOX 1471.

"Fabbri & Chauncey,"

48, South Street,

New York, Feb'y 5<sup>th</sup>, 1881.

*Answer*  
Prof. Thos. A. Edison,  
Menlo Park.

Dear Sir:-

Referring to our recent conversation with you, we would now say that we think it important to make an exhibition of the electric light at the following places:-

Caracas, Venezuela, to the extent  
of not less than 100 lamps.  
Rio-de-Janeiro, Brazil, " " " " " " 150 "  
Buenos Ayres, Arg. Repub. " " " " " " 100 "  
Valparaiso, Chile. " " " " " " 200 "  
Lima, Peru. " " " " " " 150 "  
Bogata, U.S. Columbia " " " " " " 100 "

We deem it very desirable that the exhibitions should be made with the least possible delay; and that everything necessary - including motive power - should be sent from this side. Will you kindly let us know whether you can furnish us with the necessary apparatus, and, if so, by what time?

RECEIVED  
We desire this information so that  
we may make all necessary arrange-  
ments to put the light in operation  
at the points named, as soon as  
the machinery arrives.

We are, Dear Sir,  
Yours very truly,  
Fabrizio Chumney

Sacramento, Cal.

Fabrizio Chumney

Answered

Feb 5th 1881

THOMAS A. EDISON,  
No. 65 FIFTH AVENUE,

*Spanish Colonial Light*  
NEW YORK February 9th. 1881.

*File*  
Thomas A. Edison, Esq.

*James D.*

65 Fifth Ave. City.

Dear Sir:-

I am directed by President to inform  
you that a meeting of the Directors of the Edison  
Spanish Colonial Light Co. will be held at the office  
of Messrs Porter, Lowrey, Soren & Stone, 3 Broad St.  
at 3 P. M. Thursday, 9th. February,

Respectfully,

*Samuel Insull*

Asst. Secretary.

FABRI & CHAUNCEY,  
PO BOX 1471.

48. South Street  
New York Feb 11, 1887

J. A. Edison Esq. <sup>answ. to</sup> ~~Ward~~ <sup>Ward</sup>  
65-5 Ave.  
City.

Dear Sir:-

We are in receipt of your favor, which is duly noted; and we shall be obliged if you will order the two outfits (75 lights each), as you propose, and engage the engineers when the outfits are ready.

Will you kindly make every possible effort to get the outfits ready without any un-

- necessary loss of time, as we want to put them in operation on the East and West coast of South America just as soon as we can.

It will be most important for us to have full details as to cost of large plant &c &c., as we think our correspondents will be able to commence negotiations for permanent illuminations, as soon as the exhibitions are made.

Yours very truly,  
Fabri & Chauncey  
- R - We presume that you

the only you will put  
some extra lamps, to  
replace any that may  
get broken, etc.

F. C.  
J. C.

Fabbio & Chamusca  
#7

Ordering plant for East &  
West coast of S. America.

Feb 11 - 1884



FABRI & CHAUNCEY,  
PO BOX 1471.

18, South Street,

New York, Feb. 16, 1881.

I have nearly 60 days  
J. H. Edison Esq.  
New York  
10-5 Ave,  
City.

Dear Sir:-

Under date of  
Jan. 10, our friends in Val  
=paraiso write us:-

"We have obtained  
from the government  
the certificate according  
to Mr. Edison the exclusive  
privilege in this country  
for his inventions as  
per documents and speci-  
fications presented. The  
patent is for 8 years,  
commencing one year

"after date of document  
"28 Dec. last; this year  
"lay from Dec. 28/80 to Dec.  
"28/81 being allowed to  
"introduce and set in  
"operation the machinery  
"necessary for the establish-  
"ment of the electric light.  
"We should be glad therefore  
"as soon as it is conve-  
"nient <sup>to you</sup> to forward a  
"complete apparatus in  
"its most perfect form,  
"to receive same, in  
"order to comply with the  
"law & make a practical  
"demonstration."

In view of the  
foregoing, we trust you

will do your utmost  
to hurry up the outfits  
already ordered. Can  
you give us an idea  
of when they will be  
ready? We shall be  
writing to our friends on  
Friday, and should like  
to inform them by that  
opportunity.

Yours very truly,  
Faber & Chamney  
J. H. Carter

Don't write  
Feb 26 1888  
Faber & Chamney  
J. H. Carter  
J. H. Carter

JOSE F. de NAVARRO,  
71 BROADWAY,  
Post Office Box 2396.

New York, February 19, 1881.

My dear Mr Edison:

Mr. F. Mora

whom I had once the pleasure  
of introducing to you & who is  
aiding me in the Cuban mat-  
ter, will call upon you for  
information in reference thereto.

I beg you will furnish the  
same without reserve and as  
if to me personally.

Very Truly Yours

J. Navarro

Thomas A. Edison, Esq.  
65 Fifth Ave.

<sup>to</sup>  
Cuban Fight  
Introducing Mr. Mora.

Navarro  
Feb 19<sup>th</sup> 81

JOSE F. DE NAVARRO,  
71 BROADWAY,  
Post Office Box 2556.

New York, April 26<sup>th</sup> 1881

Dear Sir:

I learn that there is a misunderstanding in the plans ordered from you in March last, intended for Havana; and as it is important that no time should be lost in getting the same ready for shipment I hasten to comply with your request & hereby approve of the order given by you for: "A complete outfit. Capable of giving three hundred (300) eight Candle power lights. Said outfit to consist of dynamo, engine, Boiler, Regulator, Lamps and all appliances necessary to operate the same in Cuba.

I also agree to pay for the above when shipped at the same price that Electric Light Company pays.

I am Dear Sir

Yours Truly



Thomas A. Edison Esq.  
46 5<sup>th</sup> Avenue  
City.

Cuban Light

26<sup>th</sup> May 81

Navarro.

Ordering  
plant

John H. Porter,  
Groveport, H. Lowrey,  
Geo. Walter Stone,  
Chas. Francis Stone,  
Geo. S. Hamilton,  
Wm. L. Porter.

*Porter, Lowrey, Stone & Stone*  
*Attorneys & Counsellors at Law*  
*No. 3 Broad St. New York.*

P. O. Box 1836.

July 20th 1881.

18

Dear Mr. Edison:

Lowrey asked me before he went away,  
and Fabbri & Chauncey have ever since been urging me, to draw a  
contract between you and F. & C., in respect to India. I have  
begun it.

I think there is only one point that will  
require much discussion, and that is the requirement on your part,  
as suggested in your confirmatory letter to Lowrey, of the instal-  
lation in India of an experimental station for the purpose of  
illustrating your inventions. This requirement first appears  
in your very last letter in the correspondence, and I find that  
Lowrey answered you that that had at least never been considered  
between himself and F. & C. Is it indispensable that this shall  
be required and form a term of contract; and if so, how is the  
expense of it to be borne, as you understand it?

After hearing from you, I will submit your  
answer to F. & C.; possibly they will concur without any objection,  
(if you require the thing to be done,) and at their sole expense;

but they tell me that the expense ~~is~~ already incurred, and advanced  
by them, amounts to considerably more than \$3,000.; I don't know  
but they said \$4,000.; and I inferred from the tone of Lowrey's  
letter to you that they would not be very willing to undertake  
this additional expense.

Very truly yours,

*Wm. L. Smith*

Geo. Wales Stern.  
 Chas. Francis Stone.  
 Geo. S. Hamlin.  
 Wm. L. Porter.  
 P. O. Box 1836.

No. 3 Broad St. New York.

Aug 1. 1887.

Now Mr. Fairbank. With your state to me  
what sort of a station, you will require  
Public & Chancery to set up in Berlin  
what is it & comprise and what will  
be the cost of it?

I suppose the material will be  
best supplied from your shops.

State your side of the weather fully and specifically.

5 maff Sonu.

Handwritten notes on lined paper:

1. H. o. c. j. C. J. Z. S.  
C. v. h. y. j. b. h. n  
r. p. e. - d. i. p. z. j. m. l.  
h. r. b. A. > b. A. s.  
h. i. L. n. y. d. f.  
- i. n. h. j. l.



John K. Porter.  
Cassius M. Lavery.  
Geo. Wain Stone.  
Chas. Francis Stone.  
Geo. S. Hamilton.  
Wm. L. Porter.

P. O. Box 1836.

*Porter, Lavery, Stone & Spencer*  
*Attorneys & Counsellors at Law.*  
*No. 3 Broad St. New York.*

August 16th 1881. 18.

Dear Sir:--

Enclosed is first draft of proposed contract between parties for India.

I do not suppose it is complete, but I think it covers, as drawn, terms which both parties will not differ about substantially. As to added terms, kindly send me memoranda of such as you desire.

As this has been ~~to~~ great part dictated, please preserve your copy and return it to me with proposed amendments or additions:

Respect'y,

*J. W. Stone*

To,

Mr. Thomas Alva Edison.

FABRI & CHAUNCEY,  
PO BOX 471.

48. South Street  
New York Aug. 22 1881

My dear Sir

I have just received from my brother a letter in which he requests me to say to you that Mr. Inoué's letter with enclosure from Norway was received and that he wishes you to send ~~him~~, hereafter, all such communications to him and not to Mr. Leonard as you did in this instance.

I hope to hear soon that the machinery for South America

is ready. - I want you to bear in mind that it will take at least 35 days for it to reach Valparaiso, & that the right to the patents in Chile will expire in December if an exhibit is not made by that time. -

Yours truly  
E. G. Fabry

T. A. Edison Esq  
65 5th Av.

P. O. Box 1836

23

*Shen*

$\frac{1}{\sqrt{2}} \left( \begin{matrix} 1 & i \\ -1 & 1 \end{matrix} \right)$

English & L.

Sept- 22, 81

P. L. H. S.

Mr. Edison,

Permit me to inquire who is the proper person for me to refer to in order to ascertain what progress is being made touching the working of the Canadian patents. My only object is to sort of keep my eye on the subject to see that it is attended to. Is Mr. Upton the man?

In my letter to you of Oct. 11th. on this subject I stated that I would hand you for the parties whom you would send to Canada the two Canadian patents Nos. 3 and 4. I have that in mind and shall expect to hand them to you in a day or two or I will keep them to be handed by me to the parties who go to Canada to work the patents.

S. B. Eaton

Oct. 19th. 1881.

per Mc. G.

Canada Light

Dec 19-81

East

Handwritten notes and symbols, possibly a list or a set of instructions, including various letters and numbers.

Faint, mostly illegible text, possibly a list or a set of instructions, including various letters and numbers.

[FROM SAMUEL INSULL]

Oct. 28th,

Haj. Eaton:--

Referring to your several notes as to Canadian Patents, the working of them must be by the Edison Light Company. Mr. Up on is making an estimate of cost of working a small Lamp Factory. I think it will be a well for you to communicate directly with him on the subject. I have sent your letter of the 11th, enclosing a copy of Mr. Serrell's letter of the 7th, to Mr. Up on.

Yours truly,

Oct. 25th,

Francis R. Upton,

Edison Lamp Co.,

Monte Park, N. J.

Dear Sir:--

I beg to enclose you herewith a letter addressed by Maj. Eaton to Mr. Edison, dated the 11th inst. on the subject of working Canadian Patents. I also enclose you copy of a letter addressed by Mr. Carroll to Maj. Eaton dated the 7th, and have informed Maj. Eaton that it is the business of the Electric Light Co. to work their own Canadian Patents, meaning that they must stand the expenses and have requested him to communicate with you on the subject of starting a small establishment in Montreal for making lamps.

Yours truly,



File

6, Lombard Street, E.C.  
London, October 29<sup>th</sup> 1881.

J. A. Edison Esq.  
65, Fifth Avenue New York

Dear Sir,

I beg to confirm the following cables  
between us viz

From you October 28<sup>th</sup>

French syndicate who will operate  
"Countries controlled by European Light  
Company desire operate unpatedented  
Countries same terms Communicate  
with Bailey

To you October 29<sup>th</sup>

"What is cost of thirty lamp dynamo and  
"how soon can you ship same without  
retarding Johnson's existing orders"

Yours faithfully  
J. E. Howard  
J.E.H.

File

(Personal.)

Hotel Oddo,  
Santiago. Nov. 11, 1881.

Dear Sir:-

Since I have been in Santiago efforts have been made to "pump" me in regard to the financial organization of an electric light company here of which I know nothing. I understand, however, that it is proposed to organize a central company for Chile and then dispose of the privilege for each city to any local organization that will buy. But in case the local gas companies buy the concession no provision is to be made requiring them to put your system in use. The result would therefore be that the privilege would be protected and nothing done in any city where the gas companies can get control. I do not know whether this will meet your views or not, but no harm can come of your understanding the programme. If you would not insist to any such arrangement you might cable as follows: "Ekenstew Valparaiso Pilot-" by which I will understand that you prefer to have a clause requiring purchasers to use the system within a specified time, & that I am to inform you

personally. Now matters go. I have a sort of an opinion that everybody down here will stand some watching, as I notice they chain up the candlesticks in the churches.

I should suggest that you write an autograph letter addressed "Señor Don Vicuña MacKenzie," Santiago, regretting that his kind offer of Santa Lucia Hill for an exhibition could not be accepted as the buildings are not suited for a commercial exhibition, and thanking him for his interest in the electric light and kindness to your representatives. He will have it framed & afterward write up the light in every newspaper in Chile.

If in these suggestions I am getting out of my latitude, a hint to that effect will not be disregarded.

Coal mine here recently submerged and coal now \$20 a ton. Gas \$8 and burners (6 ft.) not giving over 10 candle-power. This is a big field.

Yours Truly,  
W. K. Stewart

Care  
Ed. Kendall & Co.,  
Valparaiso.

The COMPANY TRANSMITS and DELIVERS messages only on conditions, limiting its liability, which have been accepted by the sender of the following message.

This message is an UNREPEATED MESSAGE and is delivered by request of the sender, under the conditions stated above.

A. R. BREWSTER, Secy. No 1 NORVIN GREEN, President.

Dated New York 16 (Wk) 1881

Received at New York  
Edison

READ THE NOTICE AT THE TOP.  
Can you come to Sixty  
five fifth ave this evening  
on important Colonize business  
to reply to cablegram from  
M Dabbi, in England who  
sails tomorrow from Liverpool  
answer

J. P. Lowrey

29 Paid  $\frac{w}{e}$  330pm

"Colonize" so repeated

The COMPANY TRANSMITS and DELIVERS messages only on conditions, limiting its liability, which have been accepted by the sender of the following message.

This message is an UNREPEATED MESSAGE and is delivered by request of the sender, under the conditions stated above.

A. R. BREWSTER, Secy. 3 NORVIN GREEN, President.

Dated New York 16 (Wk) 1881

Received at New York  
Edison

READ THE NOTICE AT THE TOP.  
Lowrey wants to see  
you here tonight about  
India and Colonial (?)  
light he has cable from  
Dabbi wire me if you  
will be here  
J Insull

25 Coded  $\frac{w}{e}$  407pm

Lorveny  
Dec 16, 81

Ingham  
Dec. 16, 81



John B. Porter,  
George B. Lowrey,  
of New York,  
Lawrence & Shaw,  
New York.  
Wm. A. Porter,  
P.O. Box 1836.

Porter, Lowrey, Lowrey & Shaw,  
Attorneys & Counsellors at Law,  
No. 3 Broad St. New York.

Dec 20 1891

Dear New Union. It is proposed to  
organize the Cuban Electric Light  
Corporation. Mr Lowrey & Mr Navarro  
can attend to the business here, on  
Thursday, at any time convenient  
to you, that you will name.

Please inform us early morning  
(better by telegraph, in receipt of this)  
to get all parties together - Besides  
L & N, there are, Eaton, Moore & Stone  
& myself.

Mr Navarro is pressing urgently  
that this be done as early as  
possible.

Very truly  
Yrs J. B. Porter

John K. Peter,  
Secretary of Society.  
Geo. Wm. Soren,  
Chas. F. Stone,  
Crest. H. Smith,  
Wm. L. Brown.

P. O. Box 1836.

Porter, Lowrey, Soren & Stone  
Attorneys & Counsellors at Law,  
No. 3 Broad St. (DICKEL BUILDING)

New York, Dec. 23 1891

Dear Mr. Soren. It has  
been agreed that all parties  
shall meet here, on Friday  
Dec. 30. at noon, to organize  
Cuban & Havana United  
Fight Companies. Please  
notify Mr. Soren & kindly  
see to it that the appointment  
is not misfired.

If I can attend at an  
earlier time, I am & telegraph  
from Boston, on Monday,  
and any new arrangements  
be communicated to you.

Yours,  
J. M. Soren  
Remind me if this  
appl. S. I



[INCOMPLETE]

should not close the arrangement for the  
Australian Colonies with him, it might be  
very important to have the Cape Colonies to  
put in with them to some other purchaser.  
I think this is important for you, and also  
important to sustain Faber in demanding  
£50000 for Australia without South  
Australia. I also think you should send  
this cable today before Goussard can  
claim to have done something, or have  
committed himself under your cable of  
last night.

Yours truly  
H. P. Lovejoy

J. A. Edison Esq  
65 Fifth Avenue  
City

Draft 31.12.81.

New York

188.

Gentlemen,

Referring to the arrangement recently made by Mr. Fabri with C. E. Goureaud Esq. of London, I have to say that I understand the same to be as follows:-

Colonel Goureaud is to have the right to make a sale of all the Colonial interests covered by the correspondence between Mr. Downey, yourself, and myself; to wit, all the New Zealand, Queensland, Victoria and New South Wales W. Australia concerns. The price and terms of any sale to be, however, submitted to me for my approval before the same shall be binding, and out of the price received are to be paid: first, all expenses and charges incurred by you in respect of the patents or otherwise; and the nett results remaining are to be divided into three parts of which said Goureaud is to receive one part as his compensation, and to pay therefrom all commissions, concessions or charges made or incurred by him in effecting such sale: provided however that the same shall not

including 500 to 2 1/2 per cent of the amount received  
 with 8% interest  
 (these three expenses are to be paid)

reduce the share of said Goureaud Belgium one quarter of each nett price.

I ratify and approve the arrangement as above stated, and will execute whatever papers maybe necessary to carry it out, and to enable Colonel Goureaud to make an effective sale and disposition of all said patents.

~~The patent is now a failure.~~



ADVERTISING &amp; TRANSLATING DEPARTMENT.

In the city of New York on the  
 before me  
 the presence of the undersigned witnesses.  
 There Appeared

Mr. Thomas Alva Edison, of Menlo Park,  
 State of New Jersey, (United States of America),  
 at present the owner of a Patent of Invention  
 for twenty years, granted by the Government  
 of His Majesty the King of Spain on the  
 first of February eighteen hundred seventy  
 nine, under the number one hundred and  
 twenty eight for some "Improvements in  
 of the methods and means of producing  
 currents and light by means of electricity,  
 in favor of said Mr. Thomas Alva Edison,  
 as is shown by the following certificate given  
 with the approval of H. E. the Royal Delegate,  
 Director of the Conservatory of Arts and the  
 official seal at Madrid on the eleventh  
 day of February of the current year, by  
 Don José Maria Gues Laris, Chief of  
 the Bureau of the Body of Civil Adminis-  
 tration, honorary professor of the Conservatory  
 of Arts and Secretary of same and which  
 reads literally as follows:

(Here Certificate in full)

And said: That by the present he cedes  
 & transmits his right to said Patent

Secret American  
 Patent  
 Assignment to the National  
 Library, from Edison's Children's

and to all eventual additions to same, in  
 and for all the Archbishops and Princes of  
 Spain beyond the seas, to and in favor of  
 Messrs Jose T. de Navarros of New York,  
 Thomas also Editor of Trents Park State of  
 New Jersey, Treasurer P. Lowry, of Maryland,  
 State of New York and George Walter Fenn, of  
 New York, United States of America, that  
 they may hold and enjoy said Patent and  
 all the privileges belonging to same, as  
 their own property, of which they are absolute  
 owners, <sup>and Thomas also Editor</sup> reserving, notwithstanding his  
 whole rights to said Patent in the Kingdom  
 of Spain. With power of rectifying and  
 publishing the present document where they  
 may think necessary proper

And in order that it may be known  
 at the request of the party interested, I  
 give the present which I sign and seal in  
 era ut cupio.

Signed thus in Spanish

Copy.

I have just returned from Rio de Janeiro, where I have been to see the much-talked-of Edison light. As the Americans would say, I was just 'hopelessly' for about a week. I had two days in Rio, & had intended writing an account for the 'Telegraph Journal', but as I was allowed to see many things referred to the public only to private letters of introduction which I carried, I think perhaps I have better not do so. By this time you will probably have seen the Edison light. Owing to the breakdown, I did not see the lamps illuminated, but this was of small consequence, as I saw all the apparatus. The lamps are just as described, and in the Exhibition in Rio, are fixed in many different ways as Pendants, single & double, on Brackets or flashlights, on Table Lamps, with shades over them. The effect must have been very beautiful. Sixty lamps were maintained at a cost of 8 P.

Edison's Representative told me, that the breakdown was due to someone having short-circuited two open wires, which he was employing as leads. I ~~inquired~~ asked him, why he had not brought a spare Armature, to which he did not give a direct reply. Afterwards I was told, that by one of the Government Electricians, that the breakdown was not due to a short-circuit, but was owing to Edison's man trying to do too much. He tells me, that from 60 the number was increased to 75 lights, & that for this reason, the Machine went. The man was inclined to think, was the case. He also tells me, that there was a spare Armature, and that this also had given out. I saw one Armature that was being repaired. It had 72 Contact Plates, and was wound outside with about 1 mile of wire. This wire was completely fused and useless, & the cheeks of the Armature, which are made of some fibrous substance pressed into a sort of cardboard, were altogether spoiled, split into thousands of pieces. Edison's man was replacing these by cheeks of thick shoe-leather. The wires cut into pieces were fused together & worn into deep pools, where the brushes rubbed. All this was done in a few seconds, for the engine

2  
was stopped at once. The Siemens Machine (alternately)  
was supporting 16 lights also with 8  $\frac{1}{2}$  HP. These lights  
were burning beautifully steadily, and the Generator  
was comparatively cool. I put my hand on my part  
of it without inconvenience. The Generator was calculated  
for 20 lamps, & has been supporting this number every  
night for some months past in one of the squares of  
the City; but the number was reduced in order to  
relieve the Machine a little, as the temperature was  
exceedingly high in the Exhibition - almost unbearable  
in fact. Upon a devised circuit from the little  
Generator, were placed 14 Swan Lamps. These  
lighted up the room very satisfactorily when the  
Machines were running. If these were put up in this  
way, they did not compare with the Edison's; in fact  
there was no idea of them doing so. This I was obliged  
to explain to the Editor of the American Paper in Paris,  
with whom I was staying, for he had a very poor  
idea of the Swan light. Some experiments with the  
2 lights on Edison's Generator showed that roughly,  
the Swan is equal to  $\frac{3}{4}$  of Edison's. The current  
for Edison's half lamp only brought Swan's to reduce,  
while the power for the former's full lamp, destroyed  
Swan's almost immediately. The Edison lamp is  
advertised to burn 600 hours, but I was told many  
did not burn one. The Edison burned for 21 days  
before going out. —

May 6, 1966

Please  
relativ  
after personal  
insult

O.K.

Thank

Me

Apr 6.



**1881. Electric Light - Foreign - Europe (D-81-032)**

This folder contains correspondence, reports, and other documents relating to the establishment of Edison electric light companies in Europe. Among the correspondents are Joshua F. Bailey, Charles Batchelor, Ernest Biedermann, Grosvenor P. Lowrey, George W. Soren, and Drexel, Morgan & Company. Some of the Batchelor correspondence concerns the Paris Electrical Exhibition. Related material can be found in D-81-027 (Electric Light - Edison Electric Light Company of Europe, Ltd) and in D-81-035 (Exhibitions - Paris Electrical Exhibition).

All the documents have been filmed except for duplicate copies of correspondence and copies of cable messages filmed in Letterbook, LM-001 (Letterbook Series).

Blank No. 1.

## THE WESTERN UNION TELEGRAPH COMPANY.

This Company transmits and delivers messages solely on condition, limiting its liability, which have been accepted as by the sender of the following messages, in the sending station for completion, and the Company will not hold itself liable for errors or delays in transmission or delivery of telegraphed messages, except in the case of gross negligence and if delivered by request of the sender, under the conditions stated above.

A. H. STEWART, Secy.

MORVIN GREEN, President.

Dated New York Jan 1st 1881

Received at N.Y.

To Edison

READ THE NOTICE AT THE TOP.

With you and whole  
family, a very happy new year  
Surgettini leaves Wednesday  
on Thomas Parson's Telegraph  
when I shall come down and  
join him.

Respectfully

Edison

*Edison*

Compliments of Mr. Green  
U.S. Rep.

HOTEL DE LA COURONNE

J. WEBER

Faubourg de Savernois

STRASBOURG

Strasbourg Jan 9<sup>th</sup> 1881

Mr. T. A. Edison

New York

Quod  
8/1/81

The Strasbourg R.R. Depart was  
delighted for the first time about 3 days  
ago, and so delighted was "mine host" with  
the new light that he arranged a great  
Dinner, bill of Fare of which I have the  
pleasure to enclose.

The R.R. officials would not get tired  
to fill up their glasses with Champagne and  
drink the health of "Hon. Edison", of which  
fact I make mention upon the special  
request of one of the directors.

Yours very truly  
Ph. Seibel

European Lights

Jan 10. 81

Beiderman

5<sup>th</sup> Avenue Hotel  
New York 10<sup>th</sup> January 1881

Thomas A. Edison Esq<sup>r</sup>  
Grover Park

My dear Sir,

I telegraphed you twice today  
but have naturally no reply. —

I must have an extension  
of the option until Thursday  
next, hence I send it on writing  
as the Express would it as —

The names of these lines is  
Mr. Tung, Electrician, whom  
you know and I should feel  
obliged to you if you would  
give him two large lamps  
two half lamps and two or  
four smaller or three lamps. —

I would then to try Lugo's  
new machine to see if they  
burn and if his invention  
is worth anything which I  
do not believe. — Better send  
Bachelor or Hanson or Clark  
or come yourself which would  
be the best to try the machine.  
Lugo & Warlow would be enchanted  
to see I will give any one or  
more who come a good dinner  
at Delmonico's to strengthen them  
for the experiment. —

Please don't put this letter  
in your pocket and see whether  
that you get it a few days

afterwards, but try to attend  
to it alone and let me know  
by telegraph, that means to say  
send me a message over the  
wire who and at what time  
you will come. —

Please give my best regards  
to Mr. Erwin, Mr. Davis and  
believe me my dear Sir

Yours very truly  
Wm. Dickinson

P.D.  
Please advise your dispatch to  
me via Boston New York

Copy telegram  
to 10/10/10?

Edison Minlo Park.

Have imported cable from  
Europe will come

this afternoon 6.30

turn in if you are at home  
reply quickly

19 p.m. Biedem

To B. Ny  
All right

20th

3  
NY 10 Jan'y  
Edison

Cannot come down today  
much have Extension of option  
until Thursday reply by Cable  
So that can cable I want also  
the option in writing as they want  
that Baltzer cables that he has the  
option in hand X 5<sup>30</sup> per Bidderman 39.62

18 Jan My.  
Edison  
or Carman or Batchelor

Telegraph me at once can  
Baltzer if Edison is here today  
& if you can light up this  
Evening

189  
Bidderman

THE ALLEGEDLY AMERICAN TELEGRAPH COMPANY

**THE WESTERN UNION TELEGRAPH COMPANY.**

ALL MESSAGES TAKEN BY THIS COMPANY SUBJECT TO THE FOLLOWING TERMS

[illegible]

transmitted by automatic or manual means, including agreed amounts of risk, and payment of premium thereon. The Company shall not be liable for damages in any case where the claim is not proved to the satisfaction of the Company. The Company shall not be liable for damages in any case where the claim is not proved to the satisfaction of the Company. The Company shall not be liable for damages in any case where the claim is not proved to the satisfaction of the Company.

A. B. BREWER, Secretary

**NORTH GREEN D.**

Send the following message, subject to the above terms, which are agreed to.

~~Edison~~ Edison in N.Y. will not light-

unless we receive telegram from

~~Chas~~ Sam

Am 6. November

12 10 11.

**READ THE NOTICE AND AGREEMENT AT THE TOP.**



Wentworth Park, January 19, 1881

Majors Pathe & Lubbenheim and  
Herr Riedemann, Esq.

New York

Gentlemen

In consequence of the conversation I had with Mr. Riedemann I am willing to and hereby do extend the option of ten thousand and one shares of the Edison American Light Co., Inc., until the end of this month. - It is well understood that the option I give you is as follows:

That your parties can take from me 10,001 shares of A. E. L. Co. Inc. for \$750,000, - seven hundred fifty thousand dollars - cash and one quarter of the net profits the syndicate who takes the same should make.

The money only payable after the parties have entirely satisfied themselves by their own engineers that my light is practicable and satisfactory to them.

This option as given by me meaning that your friends are to declare prior to the expiration of this month that they will undertake the examination and if found perfectly satisfactory to themselves will then take the stock at the above

Such examination to be completed before February Fifteen 1881

*M. virens* Linn.

mentioned price

remain gentlemen.

Yours respectfully

[illegible]

at 371 to the  
interior of the  
main body of the  
17-22 and

T. A. EDISON, 1130 1/2 St

Monlo Park, N. J. *Jan 19 1887*

*Cherbuliz*  
*10 Petitet Geneva*

*After Beginning in New York*  
*six weeks delay consented to*  
*Edison*

*14 Monlo Park N.J.*  
*4 P.M.*  
*9th*

Blank No. 1.

**THE WESTERN UNION TELEGRAPH COMPANY.**

This Company TRANSMITS and DELIVERS messages only on conditions, limiting its liability, which have been assumed to by the sender of the following message.

Messages can be started again only by repeating a message back to the sending station for retransmission, and the Company will not be held liable for errors or delay in transmission or delivery of messages.

This message is an UNREPEATED MESSAGE and is delivered by request of the sender, under the conditions stated above.

A. R. BUEWEE, Secy.

NOBYN GREEN, President.

Dated *New York Feb. 14th* 1887

Received at *Washington*

To *Edison, Johnson or Cannon*

READ THE NOTICE AT THE TOP.

*Telegraph if you*  
*have received any*  
*Cable from Europe*  
*Bidenheim*  
*Spain*



Cable

Bredeman

Paris - Feb'y 20 1881

Care Balzer ny

Vu Cahen anvers affaire  
plaît mais demande quatre  
ou cinq jours pour réponse.

Turrettini.

Offer was \$750,000 Cash & 25%  
profits syndicate for 10050 - shares  
belonging to Edison =

Telegraph Bredemann  
Arlington House Washington.

What shall I answer?

My dear Sir, New York 22 Feb'y 1881

I could not go to Washington  
Friday. - Please let me know an  
answer at the 5th Avenue Hotel  
this evening. - You were asleep when  
I called and I did not want to  
disturb you. - Yours very truly  
Thos A Edison Esq & Susan Birden Esq

Amended from

March 1, 1881

Whereas by an instrument dated March 1st A.D. 1881 made by and between Thomas A. Edison of the first part Drexel, Morgan & Company of the second part, and Egisto P. Fabari and Grosvenor P. Lowrey as Trustees, of the third part, the said Edison did consent and agree to give to Drexel, Morgan & Company control and power to sell or otherwise dispose of certain inventions made or to be made and letters patent therefor, granted or to be granted in and for Sweden and Norway, all as is more particularly set forth in said agreement of March 1st A.D. 1881, to which for greater certainty reference is hereby made.

Now, in execution of certain provisions of, and subject in all things to the terms of said agreement, and particularly to such terms thereof as relate to the extent and limitation in respect of time of the interest in such inventions and patents which may be acquired by Drexel, Morgan & Company thereunder, I, Thomas A. Edison, have made, constituted and appointed, and do hereby make, constitute and appoint said Drexel, Morgan & Company and the said firm as it may be hereafter constituted and the legal surviving partners thereof at any time during the operation hereof, my true and lawful attorneys, irrevocable for me and in my name to take all proceedings and to make and sufficiently execute and deliver all writings necessary to secure in my name, or in the name of my assignees, as they may be compelled by law, or may be able in their

discretion and determine to do, letters patent in and for Sweden and Norway for all my inventions, discoveries, improvements or devices of or relating to means for developing of electric currents and the application of the same to uses of illumination or power or heating, being such inventions as are more particularly described in said agreement of March 1st A.D. 1881, which I have made or may make before March 1st A.D. 1886, subject, however, to such limitation and determination of the interest of said Drexel, Morgan and Company in such invention and patents as are provided in said agreement of March 1st A.D. 1881, and to sell all the right, title and interest which I may at any time hereafter have in all or any of such inventions or letters patent aforesaid or undivided or other interests therein or rights of any character thereunder; or to grant licenses or other rights to use or enjoy all or any thereof either in the whole or in any part of the countries aforesaid, and for these purposes for me and in my name, if necessary, to make, sign, seal, stamp, acknowledge, verify, execute and deliver all deeds, contracts, covenants instruments of sale, assignments or licenses, or other writing of any character which may be necessary or proper in the judgment of my said attorneys to accomplish any of the purposes of my agreement with Drexel, Morgan & Company as set forth in said instrument of March 1st A.D. 1881 or any of the foregoing provisions of this power.

And I also empower my said attorneys, if it shall be necessary or desirable for them so to do, in my



name to agree with the purchasers of any of my inventions discoveries, devices or letters patent thereof of the character aforesaid, which shall be made by or granted to me before March first A.D. 1886, or the grantees of any undivided or other interest therein, or of other licenses or other rights to use or enjoy any of the same that such purchasers or grantees shall respectively have like title or interests or rights to those so acquired by them respectively in the inventions or patents of a date prior to March 1st A.D. 1886 in and to all further inventions which I may make, and in and to all further patents which may be granted to me of the like character and for the countries aforesaid at any time between March 1st A.D. 1886 and the end of seventeen years from March 1st A.D. 1881, with power to my said attorneys, the said Orexel, Morgan and Company, and the said firm as it may be hereafter constituted and the legal surviving partners thereof at any time during the operation of this instrument to appoint other attorneys or attorney in their place and stead, with the same powers and under the same conditions and restrictions herein provided, and to revoke the powers of such substituted attorneys or attorney at their pleasure. Provided, however, that the price for such further inventions or patents made or granted after March 1st A.D. 1886 and before the end of seventeen years from March 1st A.D. 1881, shall be approved by me, or, if not approved by me, shall be fixed by the decision of two of

three arbitrators, one to be appointed by me, one by the purchaser or licensee, and the third by those two, and upon such approval or fixing of a price therefor, and upon such payment or securing thereof as my said attorneys may determine on, I authorize and empower them to grant and secure to such purchasers or grantees as aforesaid such further right, title and interest as aforesaid, and for that purpose to do all such things as are above enumerated and all such other acts or things as may be necessary to be done in the premises.

In Witness Whereof I have hereunto set my hand and seal this first day of March, one thousand eight hundred and eighty-one.

Thomas Alva Edison. (T. S.)

Sealed and delivered

in the presence of,

*J. B. Eaton*

Richard E. O'Brien.

State of New York, )

ss:---

City and County of New York, )

On this fifth day of March A. D. 1881 before me personally came Thomas Alva Edison, to me known and known to me to be the individual described in and who executed the foregoing instrument, and he then acknowledged to me that he executed the same and for the uses and purposes therein mentioned.

In Testimony Whereof I have herunto set my  
hand and affixed my notarial seal this fifth day of March  
A. D. 1881.

(Seal)

Richard F. O'Brien,  
Notary Public, Kings Co.  
(cert filed in N. Y. Co.)

Blank No. 1.

# THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and RECEIVES messages only on condition, limiting the sender who has been admitted to by the sender of the following message, to the sender's address, and the Company will not hold itself liable for any delay in transmission or delivery of messages.

This message is an UNREPEATED message and is delivered by request of the sender, under the conditions above.

A. H. BROWN, Sec'y.

NORVIN GREEN, President.

Date

1889

Received at

791 BROADWAY.

Edison 65-5ave

READ THE NOTICE AT THE TOP

I have just received  
another cable will  
be at your office  
at four o'clock to  
give you their new  
proposition in full

Friedemann

21 Pl.

It came - offer was  
\$400,000 Cash

THIS TELEGRAM HAS JUST BEEN RECEIVED AT THE OFFICE IN

791 BROADWAY, near Tenth Street,

WHEN ANY REPLY SHOULD BE SENT.

Direct Wires.

350,000 of  
General Stock  
of said No.

Enclosed would do nothing  
around Greene, Morgan & Co  
100 Wall Street  
New York  
Oct 30 1887

Friend Edison

Mr. Owen tells me that  
~~some~~ necessary steps to make  
that European Co stock  
legal and of good delivery  
are yet to be taken &  
certain formalities per-  
formed - Such being  
the case it would not be  
safe to negotiate further  
at present with Mr.  
Biedermann - Besides

46  
I should not consider  
the proposition favorably  
if we have what we  
have every reason to believe  
that you have accomplished  
your stock is worth much more  
As regards the proposed  
arrangement between you  
& ~~the~~ the for the same  
countries the option ex-  
pires to-day and you can  
withdraw it or extend it  
All matters are left straight  
as you may like best -  
Please let me hear on this  
just I believe me faithfully  
Prof. J. A. Edison C. S. Patton

John K. Porter,  
Counselor at Law,  
Chas. Wiles Stern,  
Chas. Francis Stern,  
Geo. S. Hamilton,  
Wm. L. Porter.

P. O. Box 1836.

Porter, Lowrey, Lorton & Stone

Attorneys & Counsellors at Law  
No. 3 Broad St. New York.

March 5. 18

ok *unwarranted*  
London. Please execute these  
instruments for Italy, Belgium, Ger-  
many, France.

I will note them in record or  
simply note them ready for delivery when  
<sup>thought</sup> proper. Bunker & Deane &  
Bailey must make instruments of  
all their interest & the Company  
in which instruments I will make  
specific mention of all these letters  
Patent.

For them will also bring you are /  
in English paper, which is accom-  
panied by giving power of substitu-  
tion which is provided for by original  
agreement & is necessary for the suff-  
it may be & so things in England  
I will give you in type with

Copy of the above English paper as  
the they are perfect.

I am truly Yours

European Etc. L.

Nov 5-81

P. L. & S. P.

Soren

John H. Payne,  
Governor's Secretary.  
Gen. Wales Soren.  
Chas. Francis Stone.  
Geo. S. Hamlin.  
Wm. L. Brewster.

P. O. Box 1836.

Porter, Lowrey, Loring & Stone.

Attorneys & Counsellors at Law:

No. 3 Broad St. New York.

Feb 5 1881.

Dear Mr. Loring. This agreement as to  
Sweden & Norway is just like the  
English contract with only its necessary  
changes. The periods compare favorably  
by showing that you have debt to  
settle and a period of four years for  
future operations. Corresponding exactly  
to English papers.

But I don't suppose there is  
near so much importance about them  
only Dm. & Co. are looking at it  
March 8 then then one Board  
sign them and I will write every  
thing to await Conference with you  
if you desire before the afternoon of  
Monday morning.

A duplicate of the agreement &  
of the paper of the matter for you. Check  
to Hunter & Copies of all forwarded you

Just as soon as possible  
from City of New York



John H. Porter,  
Cassius E. Levey,  
Geo. Wiles Smith,  
Chas. Francis Stone,  
Geo. S. Hamilton,  
Wm. L. Porter.

P. O. Box 1836.

Ans  
(46)

Wm. L. Porter, Loren & Stone:  
Attorneys & Counsellors at Law,  
No. 3 Broad St. New York.

March 7. 1881.

Dear Mr. Edison. Mr. Edison advised me  
again this morning about stock of Electro  
Light Co. of Europe. I had proposed to  
have you deliver any thing & the Com.  
pany. would rather Puskas and  
Bailey perform also their parts under  
the original agreement.

And I suppose I don't feel much  
like making work for myself so long  
as the present difference & our service  
remains—

If nobody wants to pay us money  
why don't we have some stock  
contributed by the several interests? What  
do you think of that?

Yours truly  
J. W. Smith

European 1914

Some want stock in  
payment for

March 1914

Laurel

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July 11, 1887.  
Esq. J. P. Porter,  
City of New York.  
Care of the  
Gen. S. Hall,  
Via J. P. Porter.

P. O. Box 1836.

Porter, Lowrey, Loran & Stone,  
Attorneys & Counsellors at Law,  
No. 3 Broad St. New York.

March 1. 1887.

Dear Mr. Edison. Bristol Warren & Co.  
require these powers to be amended  
by inserting power of substitution  
and they point out 7th clause of the  
agreement, which requires it.  
Otherwise they are copies of  
the instruments already signed by  
you. Please execute these.  
Yours tr.  
Jesse C. Stone

10/10/81  
 Messrs. Porter, Lowrey, Loven & Stone,  
 Attorneys & Counsellors at Law,  
 No. 3 Broad St. New York.  
 P. O. Box 1836.

Porter, Lowrey, Loven & Stone,  
 Attorneys & Counsellors at Law,  
 No. 3 Broad St. New York.

P. O. Box 1836.

all right -

prepare the docs

March 11. 1887.

Dear Mr. Loven. Whenever I have met you  
 or written you about European E. L. matters  
 some letter from you has been on the road  
 and not yet received by me.

Referring now to yours of 9<sup>th</sup>, received  
 after meeting you this morning, I have to say  
 that though, as your title in the patents has  
 never been qualified by any agreement to  
 the appt interests of Puskin, Baucher and  
 Bailey, yet your agreements carry com-  
 plete title to the Company. Yet, as the  
 agreement of May 1878 provides for giving  
 Baucher, Puskin & Bailey for your  
 interests in the patents, these three should  
 make instruments releasing their interest  
 and assigning all their <sup>other</sup> interest under the  
 agreement to the Company of Europe. Read the  
 agreement over & you will understand me  
 at once.

Yours truly, Loven

John H. Porter  
President of the  
New York State  
Court of Appeals  
Geo. S. Haines  
Wm. L. Davis

P. O. Box 1836.

Porter, Loring & Leroy V. Shaw

Attorneys & Counsellors at Law

No. 3 Broad St. New York.

March 15 1881.

Dear Mr. Edison. The agreement of  
May 29. provided that. Barker  
should acquire ten patents of all  
nature in European Electric Light  
patents in payment of 25000-

Before proceeding to draw papers  
I wish to know whether he has per-  
formed his part of the agreement. &  
is now entitled to the 10/60ths.

If anything remains to be done  
by him, please instruct me as to the  
exact facts. so that I may draw  
the papers according to them.

Yours truly  
Leroy

Barker gave a note for  
25000- and on this note  
he has paid from time to  
time 9 think 21000, all  
He will undoubtedly pay all

Received  
by  
for  
No. 35 2nd Ave. N.Y.

March 18-1851  
J. A. Ellison Esq.  
No. 65. 5th Ave. N.Y.

Dear Sir,

Enclosed please find  
James H. Bankers note  
for \$25,000.

Very truly  
J. L. Griffin

European  
Light

11<sup>th</sup> April

Publisher  
Deutsche  
Zeitung  
Vienna

Heard wants  
interest in Light

Dr. Moser  
Heide-Strand  
4-ship  
Linnell

Deutsche Zeitung  
in Wien.

Wien, April 11. 1881.

Hochachtungsvoll Herr!

Ihre Artikel in dem Octoberhefte der North American Review, the success of the electric light hat uns zu einem lebhaften Vorantreiben gebracht, wodurch wir Ihnen auch in unsern Heftband danken.

Außerdem über diesen Artikel, hat unser junger Freund von Wien einige Anmerkungen, die in der 3<sup>ten</sup> Ausgabe Ihres Heftes gegenüber dem Heft mit einigen Tausend Dollars zu veröffentlichen.

Wir bitten Sie deshalb, das Bureau dieser Gesellschaft zu veranlassen, mit uns zu teilen, in welcher Weise eine Befreiung zu dem Unternehmen sich ableiten und durchzuführen wäre.

Es kommt uns sehr daran, dass Sie auch in Wien gewissem, durch den elektrischen Lichtversuch, Beweise zu setzen, die uns helfen.

Hochachtungsvoll, Herr

Redaction  
der

Deutschen Zeitung

H. Dr. Moser

am

VIENNA, APRIL 11TH, 1881.

HONORED SIR:

YOUR ARTICLE IN THE OCTOBER NUMBER OF THE NORTH AMERICAN  
REVIEW, THE SUCCESS OF THE ELECTRIC LIGHT HAS GIVEN RISE TO ITS BEING  
PRINTED IN OUR SUPPLEMENTAL VOLUME, WHICH WE SEND YOU.

ONE OF OUR FRIENDS, INCITED BY THIS ARTICLE, HAS EXPRESSED A WISH  
TO CONNECT HIMSELF TO THE EXTENT OF SEVERAL THOUSAND DOLLARS WITH THE  
COMPANY FORMED TO EXPLOIT YOUR INVENTION.

WE BEG YOU, THEREFORE, TO ASK THE PROPER OFFICER OF THIS COMPANY  
TO COMMUNICATE WITH US HOW IT IS <sup>possible</sup> ~~best~~ TO PARTICIPATE IN THIS UNDERTAKING.

WE TAKE ADVANTAGE OF THIS OCCASION, WHILE EXTENDING TO YOU OUR  
RESPECTS, TO REMIND YOU OF THE POPULARITY WHICH YOU NOW ENJOY IN VIENNA.

MOST RESPECTFULLY,

<sup>23</sup>  
F. A. HAMROSS,

PUBLISHERS DEUTSCHE ZEITUNG.

*Reply that I shall make an exposition  
at the coming Paris Exposition  
of Electricity and that the Co  
who own the patent for the Continent  
will have an office in Paris after  
Aug or Sept and will then be happy to receive  
propositions from the different countries  
with reference to the*



European  
Rights

J. F. Bailey  
24<sup>th</sup> April

Philadelphia  
Hotel Bellevue  
24 April '81

My dear Mr. Inaudi,

Pinkas cabled me  
yesterday to see Edison  
about cable he had sent  
him, I called yesterday  
but found him all out,  
as the Irishman said.  
I am intending to be in  
New York tomorrow evening  
& can be earlier if worth  
while. If anything special  
up will you telegraph me as  
above, yours very truly  
J. F. Bailey

BATES & LYONS, PRINTERS,  
New York,  
P. O. Box 36.

New York 26 April 1881

Thos. A. Edison Esq.  
New York

My dear Sir,

I just received a note from Mr. Davis informing me that he is going to see you today in regard to the Cable and as soon as he has seen you will at once make his report to close the matter. -

Please take time to explain him the advantages of our Cable and let me also know what time I can see you this afternoon after 4 p. m. Yours very truly

Wm. B. Brewster

Miscellaneous

26<sup>th</sup> April 1881

Brewsterman as  
to Cable

Single No. 1.

# THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions, limitations, and rates which have been prescribed by its charter and the following messages  
Letters sent by registered mail only, for the purpose of forwarding to the sending station of destination.  
All telegrams without special rates, for the purpose of forwarding to the sending station of destination.  
This message is an UNRECEIVED message and is delivered by request of the sender, under the conditions stated above.  
A. B. BREWSTER, Sec'y. NORVIN GREEN, President.

Dated 197 Broadway NY 27 1881

Received at 791 BROADWAY.

Edison 65 Dave

READ THE NOTICE AT THE TOP.

Was unable to meet  
the gentleman today  
will let you know  
tomorrow morning don't  
forget Dave  
Biedermann

16th St


IF THIS TELEGRAM HAS JUST BEEN RECEIVED AT THE OFFICE IN

791 BROADWAY, near Tenth Street,

WHERE ANY REPLY SHOULD BE SENT.

Direct Wires.

Biederman lets  
Edison, one hundred  
dollars, that the  
Hawco-Egyptian Bank  
is not in syndicate  
<sup>which under</sup>  
~~negotiating~~ <sup>for</sup> ~~contract~~  
with Edison Electric  
Light Co. of ~~Europe~~.  
But to be decided  
within three months  
Dated 2nd May 1887

~~Wm. Biederman~~  


T. A. Edison

Blank No. 1.

# THE WESTERN UNION TELEGRAPH COMPANY

This Company transmits and delivers messages only on condition, limiting the time which have been made for the purpose of the following message, and in the sending station for the purpose of the message, and the Company will not be held liable for any delay in transmission or delivery of any message.

This message is to be transmitted and delivered in accordance with the conditions stated above.

A. R. McWILLIAMS, President.

MORVIN GREEN, President.

Dated 8 Broadway 188

Received at 791 BROADWAY May 4

To Thomas A Edison

65 5ave

Telegraph where and

when I can see

you this afternoon

after four o'clock

Reply care Betzger

Biedermann

READ THE NOTICE AT THE TOP.

THIS TELEGRAM HAS JUST BEEN RECEIVED AT THE OFFICE IN

791 BROADWAY, near Tenth Street,

WHERE ANY REPLY SHOULD BE SENT.

16 PM m Direct Wires.

1881

Paris de l'Industrie  
Paris Aug 13<sup>th</sup>

My dear Edison,

Plukas is with you by  
this time - He comes as you will know  
to try and make arrangements pe-  
curing to Plukas and Bailey the  
agency for Europe. Just before leaving  
they both had an interview with me  
and wanted me to accept to be in-  
cluded in the thing. I told them that  
I did not want to divide the spoils  
before we had anything to show; and  
I intended to get my exhibit working  
before I thought of anything else -

Write me your views of what we should  
do in regard to manufacturing companies  
if they have to be started here. In  
conversation with Bailey he thought  
that you would want 10% of all the  
capital stock of the company or

company in France. I said I thought  
he was mistaken. I did not believe  
you would take less than 20% and  
I got him to understand that would  
be nothing for commissions from that.  
He wants to make companies for all  
Europe - Write me a few words so that  
I shall know your mind on that sub-  
ject - I know the general feeling  
toward Bailey and am afraid you will  
not be able to give him the agency but  
I keep the right side of him as he is a  
decent work and will do anything we  
want. I have a secretary of Plukas' out  
getting statistics so I shall be able to give  
you some information as soon as I get time.  
I notice one thing here, we shall use all  
1/2 lamps and this will be a compound  
quarter number & a given area.

Yours  
'Bachelin'

(1)

Rome, Aug 29. 1881

No 14  
Dear Sir,

Balchelor makes the suggestion that small plants should be gotten up: machines similar to those now here, which with everything necessary to put them in operation to their full capacity, would cost say twenty five hundred dollars <sup>each</sup>. The cost of shipping, freight, transport, and putting up, with rent of suitable place would add say \$3000. making five thousand five hundred dollars for each plant in running order. pay of the necessary employees being included. These plants could, <sup>be</sup> ordered say for twelve different cities e. g. <sup>(1)</sup>Brussels, <sup>(2)</sup>Frankfort-on-the-Main, <sup>(3)</sup>Amsterdam, <sup>(4)</sup>Hamburg, <sup>(5)</sup>Berlin, <sup>(6)</sup>Munich, <sup>(7)</sup>Vienne, <sup>(8)</sup>Naples, <sup>(9)</sup>Rome, <sup>(10)</sup>Barcelona, <sup>(11)</sup>Stockholm, <sup>(12)</sup>St Petersburg. We will undertake to deposit funds for payment for machines and accessories, and for sending necessary men to put them up, up to 6000 per plant. <sup>two weeks</sup> after the "big dynamo" is put in operation in the Exposition, we intend to demonstrate that the light can be furnished as cheap as gas. We will do this without in any way engaging the interest of the Company, on our own responsibility, and at our own cost. always supposing that we have borne —

(2)

arrangement for business with the Company. We will further undertake to have syndicates formed in each of those Cities for actual exploitation within 90 days from time machines arrive at destination. For some of them we will engage to have them formed before the close of the exposition. The \$2,000 <sup>(as soon as you substitute to us that you will accept it)</sup> we will give guarantee for the deposit of at time named above: viz two weeks from the time the big dynamo commences to work with result of price of cost equal to gas. Your attention is called 1) to the advantages that would result to the Edison E. L. Co of Europe from the celerity with which work can be done when directed by individuals as compared with that done by Companies. The guarantee that it would be done as proposed is that Patchelor would organize and direct the mechanical part.

(2) Suppose a policy to be adopted of forming Companies and syndicates for Cities or districts, the Company retaining the isolated plant business would not the result to the Edison Company be much better and more immediate than if the work were carried on by a great company. The results would be greater because the financiers who would undertake the organization of the exploitation would naturally take the lion share. Greater, also, because that



(3)

the amounts to be gleaned in this way, in detail would evidently be greater than any results from an operation in gross more immediate because a portion of the amounts coming from these numerous operations would be in cash, and the small companies would be more quickly organized and set in motion. You will say that the Edison Electric Light Co of Europe can neither go into nor manage the isolated plant business. But supposing the manufacturing companies to be organized as proposed in the written letter to Puckas: you would have 20% in these companies without paying anything for it, i.e. for your patent rights. These companies being once organized with you in control, it would be simply a matter of detail and organization to work everything relating to supplies through these diverse companies. In forming company or syndicates we would reserve the isolated plant business outside the limits of the Cities and districts agreed. We believe that the business alone from the indications we see already: will be worth more in revenue to the company, following the policy here proposed than the 10,000,000 fr. which we understand you propose to sell your rights in Europe. (3) The zeal and

(4)

enthusiasm which individual put in an enterprise like this will not be found in a Company. Your own personal reputation which those who are about you and are attached in some sense to you personally, care for and advance pari passu with the individual work will not be advanced in the same way by a company.

(4) Your own ideas as to the system of exploitation can be realized in the way we propose. We should all seek your direction and advice, and your policy the wisdom of which the writer fully recognized last spring would be carried out as it will now be in the States, now would be here by a Company.

(5) You would be able to control so far as you should desire the manufacture for Europe. That is to export from the States.

Yours very truly,

Pusey, Bailey

Thomas A. Edison Esq/  
65 Fifth Ave. New York. }

No 14

Paris  
5 Sep 1881.

My dear Sir,

I telegraphed to Puckas yesterday, a paper copy  
enclosed I have telegraphed to day also as per copy herewith.  
Since the opening of the Exposition the interest and  
Confidence in your light has been constantly increasing.  
It is in consequence of this that I have been able to  
arrange here for 500,000 francs to put into the  
purchase and setting up the small Plants in the  
Principal Cities of Europe & for the Capital necessary  
for starting the lamp, Conductors, fixtures & dynamos.  
The suggestion of the purchase of Plants for immediate  
use as above was made by Mr. Balthelot. He says  
that persons are constantly engaged in handling or  
in making designs of the various parts of your  
exhibit relating to the light & that unless the box  
is ready to go into the field immediately it will  
find itself anticipated either with direct imitations or  
with contrivances intended to evade your Patents.  
The surest means of meeting anything of this sort  
is evidently to put in an appearance with the genuine  
article at all the centres of Capital & population  
showing a greater celerity of movement  
than the persons who may desire  
to infringe on your rights. With this suggestion  
of Balthelot I proposed the matter to various

persons of my acquaintance. There was naturally a desire on their part to have some engagement as to preference on equal terms or some engagement that would give them some hold in the Control of the business, but this I refused squarely, saying to them that a large offer had been made to the Company showing at the same time Cable of Chakras advising me of this offer & that it would be ridiculous to propose either preference on equal terms or any control inasmuch as the only consideration that would lead the Coy to listen to any outside proposition would be the expectation of making an exploitation more rapid & effective than would be made by a syndicate of Bankers & at the same time retaining its full liberty of action. The engagements are in effect made for the sum of 2 1/2% of the per cent which shall be allowed to us by the Company in case we become its representatives - There are no engagements either implicit or explicit beyond this - In regard to the factories for the lamps Chandeliers & fixtures - I have also stood squarely for 20 per cent in shares fully paid up as consideration for the Patents & 40% of the Capital to be subscribed by you & your friends assuming the Control of these factories to go on - If you desire to subscribe any part of the

Important fact.

40 per cent so reserved it is open to you to do so. The part that remains Babinet says that if the combination is made he will take a part & the balance would be taken up by Puskas & myself. The dynamo factory requiring a capital of one million francs I have not attempted to get any control of & if the Edison European Co. controls all the others as also the exploitation there is no occasion for any uneasiness about the control of the dynamo.

All the arrangements relating to the establishment of the factories & for the purchase of the individual plants can be completed within 30 days from this date - the Company formed and the first payment made - of course the capital proposed for the small factories will only be sufficient for the first year if the business prospers and if it prospers all the parties who are subscribers to it will be able to furnish directly or indirectly, keeping the control in the original hands - I go into no detail in regard to this but you may be sure of the correctness of the statement. In the Telegram to Puskas I say "Business of individual Plants for France alone worth more than Taber offers for all Europe - selling rights or forming Companies for each City & keeping Plants business for Co. will give revenue that cannot be estimated. - He

are now receiving applications from various quarters of France & also from other Countries for such Plants. An application was made two days ago for the Bon Marche requiring 5000 Burners. Bachelot estimates that the interest on the Plant & the cost of running will be 52000 francs per annum. The Director of the Bon Marche says that they pay the Gas Co. 100000 francs & outsiders tell me that they pay very much more than this; but supposing Bachelot's estimate to be 25 per cent under the actual cost for the light there would still be a margin sufficient for putting ~~the~~ a relatively enormous royalty on the use of such Plants. Indications that I cannot give you a just idea of are coming up every day that make it evident that even the persons who are inside have no adequate idea of the enormous extent that the application of the light will have once you are in a position to do business & I think it would be a matter of regret to all who are concerned within a very large time to see such a magnificent business disposed of for such a relatively small sum as any that has been mentioned.

If the Co. would take the policy of forming Companies for each City instead of giving a whole Country to a crowd of financiers the results would be much larger. The individual plant

business being kept in the hands of the Co. would in my opinion within 5 years give a revenue fully equal to that we have obtained from the formation of Companies so the sale of rights of Cities.

Probably the first objection that would be made to carrying out such an arrangement as this would be that it would involve the Co. in an enormous business over which it could have no adequate control, but this objection is met by the proposition to establish the different manufacturing Companies ~~from~~ <sup>through</sup> a classification of the business & a control over its minutest details would be exercised so that good representatives would only be charged with the carrying on of all negotiations & execution of Contracts & the making of publicity. & With Bateletor to organise the mechanical part & to put into operation the various factories & the first installations made, and as he would be immediately we should be authorised to make an organization by the most competent engineers here & in other countries there would be no serious difficulty on that side. I will add that Bateletor has been consulted in regard to all the matters referred to above & is thoroughly an advocate of all. Will continue this in next mail. Mail closing leaves no time for more.

Yours very truly  
Thomas A. Edison, Esq. J. H. Bailey  
(5) By W. P.

Puskas New York

five hundred thousand arranged without reimbursement for two per cent. from ten proposed leaving us and company entirely free from obligation to persons furnishing it. business of individual plants for france alone worth more than fabrie offers for all europe selling rights or forming companies for each city and keeping plants business for company will give revenue that cannot be estimated these statements are based on facts that are passing here every day the field opens wider by forming limited companies for conductors lamps fixtures and dynamos in all of which except dynamos fabrian can keep control all risks to our company will be avoided and its affairs managed evenly and singly the combination of batch with us being accepted can give immediate guarantee for five hundred thousand and for formation companies on plan written you in two weeks from successful working of dynamo at exposition and by first Nov can have all in working order batch knows and agrees above statements ask fabrian make no engagement for italy or other countries before getting letter that will be mailed tomorrow. Heracleite

7/4/81



[ENCLOSURE]

Puskas Newyork in lamp tube and  
fixture companies fabian would have  
twenty per cent of stock for patents of  
forty per cent additional which we take  
to hold control fabian can take what  
he wants batch and we remainder same  
parties who give five hundred thousand for  
plants will take remaining forty.

Paris Sept 6<sup>th</sup> 1881  
My dear ~~James~~ Ellison

The great necessity of something being done very quick impresses itself more and more upon my mind every day. If I could make arrangements to supply I could take a couple of orders per day of about a 300 light plant each and I feel terribly galled to think we have such a good thing and we have not even our manufactures started to supply anything. There is a large dry goods store here called the "Au Bon Marché." They use 5000 gas lights and they want to replace them with our light. They have been to see it often and yesterday I went and inspected their building to see how it could be adapted to electric lighting. I find they have tried kerosene light and kerosene light at an enormous expense and gone back to gas. Their gas bill average about

2

138000 francs per year. I told Bailey that I was going to see this place and he communicated with Leon, after which he told me that if this could be put in writing and I would make an estimate of about what saving could be made in this store and put the same into the hands of the Syndicate they would consider this as 1/2 of the test that we have got to make. After visiting the store I saw how easily it could be done and proposed to the "Bon Marché" people the following - They to write me to better asking me whether I could light up their place and what it would cost; also stating that they would like a preliminary trial of say 300 lights (for which we should have a put a portable engine in similar to what I have at present in the exhibition) for 3 months, and to submit to them an estimate for the expense to them

of such preliminary trial, that if they are satisfied with the light at the end of the 3 months they will give us an order for the whole store. To light their whole 5000 lights would take 320 horse power. (The Paris gas jet is not more than one half light at 9 candles). They have got excellent cellaring large enough for the boilers engines and dynamo etc and are very anxious to get it; their chandeliers are so arranged that I could very easily use them all for our light. Now in such a case as this I should advise the putting in of such a plant, as they would stop their engines and take current from the company's mains when they are laid, besides Helium and Swan are open to all such offers and the reason they come to us is because we show the best light, and upon investigation they find we have a complete system -

Now for one more thing: - I have a large manufacturer in Rheims (the Champagne district) who has been here for about a week investigating the light; he has one part of his factory lighted by arc lights driven by 8 Gramme machines and he wanted the rest lighted by our light, altogether about 300 lights. If I could give him a price I am sure I could get the order immediately. He wanted to know whether I could use the Gramme machines he had, so I took him down stairs where I have the American Commission office, Dollar's telephone office, a machine shop and Berger's office all lighted from one little Gramme machine (in all about 42 lights). I showed him our own machines and explained their greater economy. If we were manufacturing here I could secure them immediately at my own price; as it is he may

is gobbled by Maxim or Swan although in every case I take great care to point out every defect in the other systems. I have also a man from near Brussels wants 800 lights; the firm Ternua 250, the firm Staaborg about 900 and lots more; now to supply these I would make special plants driven by belt as they are not for great economy. I have found that to run the small machines above 1200 makes them spark, but below 1200 with whatever load, they give no spark; so I have slowed down to 1200 and get my electric motive force by taking off a layer of wire on the magnets; you must impress this on the people using the isolated plants as it means that the life of a commutator is years instead of months. You must not think that because I write about isolated plants that I have lost sight of the human aspect of this thing.

that is, the lighting of cities in competition with gas; I merely cite cases that are outside of the gas companies (with the exception of the "Van Marsek") and which the other people will take immediately; they get the chance; for your own private information.

The engineers for the Lord party are making calculations and burning the method of electric lighting in the multiple arc system. I think one of the best evidences of the originality of your methods is that these electrical engineers have to study it out as a new problem that they have never believed possible before. We shall be ready for them to test in a day or two. We have got Berger to get from the "Conservative des Arts et Metiers" a dynamometer which we shall put in between the machine and the engine, we expect to get that this week; whatever tests our apparatus goes through I have got two or three

influential people in the Congress who  
will ask that the Maxim, Swan,  
and others may be tested also in  
the same manner, and I shall lend  
my photometer, Calorimeter etc for  
such test if they have not any,  
which I know they have not, and  
I doubt whether they would know  
how to use if they had.

I have always given a great deal  
of credit for Arc-lighting to Brush  
but now we must be in the war-  
path for him to run down our  
light terribly and tell everybody  
that the Swan light is the only  
incandescent light that is reliable  
and that Edison's infringes it—  
When I talk on arc lights the  
qualities of the Siemens and the  
Alben stand out in glaring  
contrast with the miserable flicker-  
ing Brush light— I have had  
a visit from Mr Shillito the  
manager of Lord Salisbury's  
place and his Lordship comes  
to see me today— Shillito says

8  
they have 15 Swan lights burning  
from a large Brush machine  
driven by water fall 15 miles away  
I went all through the thing with  
him and they will want some  
of your lights to replace the Swan  
as I should judge from what he  
said they were not satisfied  
sufficiently to put any more in  
I gathered from him that they  
never knew what resistance the  
lamps were not, that they varied  
considerably, but that by putting  
them out after putting them  
in they could make a pretty  
good showing. I measured a  
few of our lamps for him but  
and they did not vary he  
was surprised at the promptness  
of our system but in his  
view economy is not the primary  
object as his Lordship found  
his money so precious instead  
of their having— Edmunds of  
the Swan light had told him  
that they had not had one

break since they came to the  
Exhibition, I told him that  
they had some go every night  
and called Luciel and Fels  
to witness it and Luciel says  
come with me and we will  
sit down in his room a little  
while and see and whilst  
they were sitting there only a  
few minutes they saw three  
go-shillits could not understand  
this as Edmunds had told him  
that they were put 10 in series  
so I told him that that was  
another item he had stole from  
us — Maxim of course is  
not lighted and has not been  
for a week so we can make  
no comparisons with him —

Now what I want to know  
from you is —

- 1 What do you propose for  
manufacturing in France?
- 2 Can you supply isolated  
plants for other countries?
- 3 Do you propose to work Europe

10

by agency or by separate Co.?  
Will you entertain the idea  
of supplying these isolated  
plants and at what price?

Would you entertain the  
idea of putting our lamps  
on Gramme machines out-  
side of France and thereby  
replacing arc-lights that  
are already running and  
at what price or royalty?  
Oles send me any information  
that you can that will  
facilitate matters.

Luciel heard Mr Lutz that  
is Siemens manager say that  
he was sorry his firm did not  
go into the incandescent light  
2 years ago but now he intends  
to do so as he sees what a good  
thing it is and besides he in-  
tends to go for Mr Edison in  
Germany on the patenting the  
Bosch & Siemens so we  
must look out for him.

Yours "Bosch"

Paris,  
7 Sept. 1881.

Dear Sir,

I made the last letter to you under date of 5<sup>th</sup> September relating to the establishment of factories the purchase of small Plaisirs a personal letter because it was my intention to refer specially to conversations that we had last Spring, but the time before closing of the mail was too short & I did not get to that. As supplementary to that letter I suggest that if the arrangement that Mr. Tucker is now proposing, should be accepted by the Co. a letter of instructions should be made embodying the general plan on which it would be your desire that the business should be conducted. You said to me last Spring that you did not believe in trying to pick up financiers, but, on the contrary, in looking for the best people who would go into the business as an investment & without making of it an affair of honour. You also stated that you considered that the percentage of 40 or 50 per cent of the Capital stock was too large & that the organisation of companies on such a basis as that would be prejudicial to the lasting interests of the Co. & mentioned that you had been opposed in the States to taking such a large percentage as 35% that you thought that 25% would be better. There is no doubt that this view

is a covert one & that it would make the  
condition of the affair much more solid & stable  
& would admit of much more rapid extension  
of its exploitation than if the persons who are  
working it were undertaking to carry on negotiations  
with three or four different groups for the  
same City or Country playing one against  
the other. I am now having prepared by a  
competent person a complete statement of the  
Cost of running, metre of installation of Gas  
for all the different sizes of tubing, that are  
employed & also of the other Plant required  
according to the number of Jets. A similar  
table will be prepared for other leading Cities.  
Mr. Bachelors will make the corresponding tables  
for the Plant of the Electric Light so that in  
presenting the matter to Capitalists a definite  
basis can be shown & if the demands on them  
are reasonable the Companies or Syndicates can  
be formed with very great facility & with the  
most solid people - Bachelors has written you  
that the main thing now is despatch because  
everybody is impressed with the system of  
light by electricity & it is only a question  
whether it will be applied by your Agents  
or by persons who imitate your work.  
Enclosed herewith you will find  
copies of the two Cables referred to in the



letter of the 5<sup>th</sup> instant which the stenographer could not find when he was closing the letter.

I called to Puskar this afternoon as follows:-

"Batch writes Fabien strongly about the  
" need of commencing, without delay, even at  
" his own expense, manufacturing & arranging  
" for Europe. Demands are so pressing, &  
" numerous & so many persons are  
" taking designs that field will be occupied  
" by infringers unless by Company. If you  
" close arrangement shall start building  
" under Batch's advice & commence  
" tomorrow making lamps & arranging  
" for making dynamos - about show this  
" Fabien as he may think it is. Taffy -  
" Get him ask Batch about it by cable."

I had conversation with Batchelor about  
it this afternoon & he told me that the  
importance of immediately doing something  
was so clear that he had written you 10  
pages of foolscap mainly on this subject, &  
that the importance of it cannot be  
exaggerated - I have thought it well to  
advise Puskar of this, that he might  
suggest to you getting the matter direct  
from Batchelor -

There are also reasons connected

with our position here which make it  
very necessary that something definite should  
be done. There are so many things that  
present themselves that it seems necessary  
to do that I don't know where to stop,  
and am gradually getting a ~~stuff~~ round me  
and taking expenses that are very heavy.

Very sincerely yours,  
J. F. Bailey

Thomas A. Edison, Esq

Blank No. 1.

# THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been accepted by the sender of the following messages:  
Messages can be carried only after receiving a message book in the sending station for compensation and for the purpose of the transmission of the message.  
This message is an UNRECORDED message and is delivered by request of the sender under the conditions stated above.  
A. R. HENKLEY, Secy. NORVIN GREEN, President.

Dated Sept 13 1881.

Received at 791 BROADWAY Sept 13

Shaul Insull

65 Ave

Telegraph

Batchelor

that

he & myself

should have

five per cent on cost price

for all goods turned out

since a dollar work for

five ten years can ship

amps immediately and seven

half light machines within

ten days shall we do it show

Dean Wadsworth & ask him

if

THIS TELEGRAM HAS JUST BEEN RECEIVED AT THE OFFICE IN

791 BROADWAY, near Tenth Street,

WHERE ANY REPLY SHOULD BE SENT.

Direct Wires.

Blank No. 2.

# THE WESTERN UNION TELEGRAPH COMPANY.

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This message is an UNRECORDED message and is delivered by request of the sender under the conditions stated above.  
A. R. HENKLEY, Secy. NORVIN GREEN, President.

Dated Sept 13 1881.

Received at 791 BROADWAY Sept 13

To

if he can get half

light machines ready

by that time

Edison

6/10/81

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Delivered subject

to connection with

THIS TELEGRAM HAS JUST BEEN RECEIVED AT THE OFFICE IN

791 BROADWAY, near Tenth Street,

WHERE ANY REPLY SHOULD BE SENT.

Direct Wires.

1881-09-18

65 Fifth Ave New York  
19th September 1881

My Dear Father

I shipped you six meters  
some days back. You had better  
do nothing more than show them  
tell them with blue vitriol and let  
them stand. Do not attempt to weight  
the plates as it is a very delicate  
job and will cause you considerable  
trouble. I have got a cigar lighter  
which will be sent you shortly. You  
may have to change the size of the  
platinum coils. Bergmann has been  
about <sup>four</sup> months making the revolving  
arc lamp and it is not done yet.  
If done in any reasonable time  
will send them to you.

The Dynamo with radial bars  
is not done yet. I stopped making  
a large machine and am making  
a smaller one and will endeavor  
to send it to you. Lay and get  
it brought prominently out in one  
of the Scientific papers as a new  
and novel Dynamo construction.  
Include new principles and describe  
illustrations in the Patent when you

will send how the connections are made.

I suppose if you get the Order for lighting the Works of the Grand Canal Navod you had better have Steam Dynamos sent you of the new type and the best plan will be not to try to use the big Dynamos you have for this purpose but to ship that to England to act as a spare machine for Johnson. I shall be able to give you all the Steam Dynamos you want by the end of December.

Regarding the European Company what I am trying to do is to have a large Syndicate formed in Paris or else where by Fabrice Fustas & Bailey or anyone else which Syndicate is to form a Parent Company for operating the Light on the Continent of Europe and to prevent this new Roy from being a purely speculation and I proposed that the Company shall pay up one million of dollars for the purpose of forming a large Manufacturing Co. for making lamps Dynamos, engines, tubes, Chandeliers and all appliances connected with

Electric Lighting and the proposition is  
~~that the~~ Company shall be formed  
 Capital Twenty million dollars of which  
 one million dollars is to be paid the  
 present European Co in cash and  
 nine million dollars stock. So it  
 would amount to two million dollars  
 of stock being sold one of which  
 goes as I have said to the European  
 Company and the other million to be  
 subscribed to the stock of the  
 Construction Company. This is the  
 correct thing to do and Packard agrees  
 with me in this opinion. It may be  
 that we cannot raise such a large  
 amount but still I believe the  
 larger we hold on the more likely  
 we are to get it. With one million  
 dollars in the Construction Co  
 run by our men and started by  
 us we having absolute control  
 the first year there would not be  
 any doubt about the technical  
 success of the enterprise and if  
 the technical success is secured  
 the commercial success would naturally  
 follow and the whole thing would  
 be a success while most inventions

sent over there have been just the  
 opposite. In my telegram of today  
 I speak of 5% to be given us, what  
 I mean by that is that we are to  
 supervise and start all the factories  
 and put them in operation and furnish  
 all duplicate drawings and have  
 construction (at cost of Constanța) done  
 on the other side all the special  
 machinery and to give all improvements  
 which we derive in our works here  
 and of which the European Constanța  
 would equally get the benefit, we should  
 have to start and superintend the  
 manufacturing in other countries than  
 France where under the Patent Law  
 we are compelled to manufacture  
 within the countries themselves. For  
 all this it is but fair that we  
 should receive 5% added calculated  
 on the actual cost of the goods  
 which should be paid us from the  
 debt when the final goods are  
 turned out, we agreeing to turn over  
 the factories to persons competent  
 to do the work when our connection  
 ceases that is except so far as the  
 5% are concerned. This sum is to

4  
 reimburse us for our time and  
 experiments on this side, our drawings  
 and expenses and you will easily  
 see that there will be a great bargain  
 for the Govt to be in funding and  
 what we have learned the cost of  
 experimenting to them would be more  
 than five times what they pay us.

As to the installation of these  
 various works I shall have to depend  
 on you entirely. You can have what  
 men you want that we can spare  
 and as to the division of the 5th  
 would make that perfectly satisfactory  
 to you

The life of the lamps are very  
 much longer than I ever expected  
 I have not seen the record for the  
 last few days but the last I saw  
 the life of the  $8\frac{1}{2}$  per electrical  
 horn powered was 1900 hours with  
 a average of 1800 hours while the  
 10 per electrical horn powered was  
 1900 hours with an average life of  
 some what over 700 hours; these  
 lamps of each kind are still running  
 but we are making very much better  
 lamps now as we had success at 188



candles in which the average life was 94 hours and the longest life of any one lamp was 304 hours at 48 Candles. This was a 8 1/2 per hour power vel. The average life of the ten per hour power lamps is enormously less at 48 Candles. But the lamps on which we are making the 16 candle record only had an average life of 12 hours at 48 candles. And that time we have curves with the ten per hour power lamps with an average life of 22 <sup>hours</sup> candles at 48 candles.

I suppose you will have some trouble with the other side in getting people to believe the statement that the average life out per hour power lamps is 300 hours because there is no way to prove it. I suggest that you take the earliest opportunity to put up ten lamps of the lowest volt in a box with glass front having same rated and start them going at 16 Candles. Have a responsible person to seal the box and verify the burning times & be allowed to

a man whom everybody has con-  
fided in. Whether you can get  
such a chance I do not know but  
it is possible you might in the  
cellar of the Grand Opera House  
when you make the installation. Now  
at any rate I personally will  
guarantee any contract, with a  
penalty of twenty thousand dollars  
(\$20,000), to put up twenty five thousand  
lamps (25000) in any city in Europe,  
the said guarantee being that if  
the lamps do not average a life of  
seven hundred hours, with ten  
lamps per electrical horse power  
said lamps giving sixteen candle  
illumination I will forfeit the sum  
above named.

Let me know if they are going  
to make a test as to the efficiency of  
the Dynamos. If so use the copper  
rod dynamo as you will doubtless  
get about 95% efficiency out of it. I  
should take out of it from nine  
to ten horse power. That will give  
you the best efficiency. Use plenty  
of gas and about your dynamo  
wires. It is a splendid thing

Put on a thin coat over night in  
between the wires or in the case  
of the small disc Dynamo pass  
around and over the bars and the  
discs at the end. It gets very hard  
and is a splendid Lubricator.

I have just thought that the  
Dynamo I sent you is wound in  
a different way with a even  
number of commutators and I  
have not sent you any description  
how to wind them. I wrote you  
previously that I had sent you a  
lot of wire so that Martin Force  
can wind the Armatures. My next  
steamer I will have a model sent  
you showing how to wind them. You  
know the greatest difference of  
electric motion force is between any  
two layers of wire and as it is  
some what difficult to insulate  
each layer <sup>by itself</sup> in the old  
way of winding we have divided the  
coil into half the number of ~~spans~~  
making each span twice as wide.  
Now we wind each span half full  
going square round the machine &  
then we insulate ~~the~~ <sup>the</sup> whole of the

bobin and sand around again over the top. This keeps the coils which have the greatest difference of potential and tend to draw one above the other instead of side by side. Thus we are enabled to get a good insulation between these coils, but to do this we had to use an even number of coils and commutators. I will send you a wooden bobin in which the first layer is shown in white thread and the second layer with black or red thread (I do not remember which now). I have sketched a new way of dealing with men now whom we are sending away say to South America. I make them ~~even~~ two complete armatures before they can go and then instead of sending an entire armature I only send wire so that if they break down they can easily recover the ~~main~~ armature.

Please let me know what are the legal results of the examination of my patent in France and also what is my legal status in England if nothing has been done there by

way of examination.

We cannot find that Swan ever published anything showing that he even experimented upon a filament of carbon in high vacuo in a chamber made of glass. Nor can we find any patents which either cover our patent or be covered by such a device. Do you know anything to the contrary?

Do you believe it would be possible to get the witnesses of <sup>the</sup> Engineers on our side and what would be the best way to go about it. Would money in the form of a fee for an opinion on the validity of our patent as against Swan, Swan Fox, Martin be the right method?

I hope you have got the Roman & Little Automatic working as I am sure it would be very striking. It worked very beautifully. Read in fact quite astonished me with reference to "Liberton". I offered to pay his way over to Paris & back which he said would amount to \$3000. A few days before he sailed he told me he had come to the conclusion that he had better

not: he would rather go ~~unhindered~~  
 and face to do anything and even  
 if he accepted he would consider  
 himself entranced. My impression  
 is that he was brought off and held  
 by Karama Bay, although I may be  
 mistaken in this. You may be able  
 to tell however by hearing what he  
 says to others where his interests are.  
 It is impossible to tell by talking  
 to him. He is a very deceptive man.  
 Very Sincerely Yours

J. O. G. H. M.

House working above land received following

East Lamps			
Life and Average			
East. N.P.	East burning	above	Average hours
8 1/2	3	1846	1257
10	3	1839	728
20 (half lamps)	2	1154	590

'12 Lamps came poor and  
 not

Copy Cable Barker to Lusk  
1st Sept 1886

Cable to morrow came how  
projects contract four times  
capital purposes hope with forty  
five to Company cable quick.  
What commission may promise  
bankers on this basis I mail  
letter details tomorrow. necessarily  
you wait it. Falsetto trying get our  
Syndicate. Hope cable tomorrow  
we hold it. Can sure and that  
Falsetto dead obtaining double  
for Companion (?) Company if  
New York plays reasonably  
into our hands then are doubtless  
here whether we are recognized  
or only volunteers. If recognized  
can carry all with us. May  
I address mine tomorrow  
to Fabian he signing reply  
ask him whether he thinks  
likely get best terms through  
people interested against Company  
or Falsetto or those interested  
with him as me  
Steuartite

Cable Bailen to Piques

14<sup>th</sup> Sept 81

Can form syndicate with engagement  
constitute European Company, when  
first station Paris lighted Capital  
nearly greater than proposed to  
Palermo. Fifty or forty five per  
cent to our Company. Will cable  
Capital tomorrow. Five hundred  
thousand francs put up when  
economy shown at the Exposition  
say between 15<sup>th</sup> for purchase  
and putting up plant European  
cities and commencing manufacture  
and five hundred more on  
declaration French option 200  
20<sup>th</sup> and five million for factory  
on declaration European option  
Syndicate leaves to our Company  
all towns with officially  
declared population to day of  
less than ten thousand  
inhabitants and all plant  
business not included in these  
towns. What they leave is worth  
more than all proposed by  
Palermo. The words first station  
don't mean station requiring  
concession from City Paris



but for example Apeka Grand  
Hotel and environs making twelve  
to fifteen thousand camps. The  
~~man~~ also offers station  
with permission from City  
Council to cross streets near  
and light up boulevard Bonne  
Rouelle itself. Station can be  
started by January & details  
by Daidar's mail if Paletto disposes  
All our syndicate comes with  
us. Some hold off hoping better  
terms with Paletto. Call me  
something for guidance

Empress Light

Baby to Baker

Sept 14, 81

Paris Sept 16<sup>th</sup> 1881

My dear Edin,

As your telegram requested me to try and bring Bailey and Fabri together I may say I have been at that very thing for a week - At first they would not listen to such a thing at all - but now I think I shall succeed - The proposition which Fabri had and was preparing for the company's consideration I was asked my opinion of by them, that they proposed was entirely inadequate for the working of such a thing as this is; after a couple of hours talk they abandoned it altogether and from what Mr Fabri says I should judge he considers it impossible to raise 5.000.000 francs for manufacturing purposes, I showed them that they can not do it for less. They are now at it again. Bailey is pushing ahead again with the proposition and as I told Fabri the other day if he only had the backing of a house like Bancel Hanger and Co it would be difficult indeed to find his equal here - They know he is a hard worker but of course they feel that they would not like to be connected with him - However I expect they will eventually come together and I hope work well as this thing ought now to be settled and we started - I have met Gustave Meyerson and in him you have a friend of course just now

almost all my time is taken with these professors  
as we want them to thoroughly understand our  
apparatus as many of them will be jurors —  
Hoffetzke has been here and gone to Switzerland —  
We have plenty of friends and also enemies —  
We make a lecture every morning on the apparatus,  
and illustrate it by working it —  
All the good scientific men are going to test our  
apparatus for publication —

Have just got the little machine and am put-  
ting it up — Don't fail to send me the actual  
cost price at our works of the 110 + 62 volt dy-  
namo also send me full price list of wires  
(copper) as it seems dear here also list of lamp  
manufacture (latest) also from Bergman and  
Johnson prices of everything —

I have asked the Lern people to put a man  
in my room at night, also one in Storis's, and  
me in Maxim's, unknown to us, to see what  
breakages there may be, I expect they have  
done so

Write you today: - Getting bids for dynamo.  
Small Gramme runs 50 half large firm  
Muhlman inst put 10,000 on lamps on Gramme  
machines then make now running are lamps  
in Germany for price lamps & Royal Swan stands  
ready tried for week bring abatement to abatement together  
must shall succeed send 1500 half with cost's open send actual cost  
small dynamo.

Yours Pratobeln -

Exposition Internationale d'Electricité

PALAIS DE L'INDUSTRIE  
Salles 24 & 25  
DIRECTEURS  
M.M. CHARLES BATCHELOR  
OTTO A. MOSES

LUMIÈRE ÉLECTRIQUE EDISON

Paris, le 16 Septembre 1881

Représentants de M<sup>r</sup> EDISON

M<sup>r</sup>. M. Puskas & Bailey

33, Avenue de l'Opéra, 33

Dear Sir:

Enclosed herewith please find copy of telegram sent this date, M. Léon and M<sup>r</sup> Castelbolognesi have carried on the negotiations representing a part of the Paris syndicate and some outside parties. The cable sent you represents the terms that they say they think their friends will accept. (1) You cannot get an absolute engagement to invest so large a sum as five million of francs in a factory and to pay down five million more to the company in advance of the lighting of a station or section in Paris. I pressed these points to day in accordance with Puskas telegram, but was met by this: "our engi-

2

may say as we think they will that the tests at the exposition are satisfactory and on their report we shall close the option for Paris, but after all their report is a theoretic report, we don't know whether on mounting a large district complication may not be developed that will put a very different phase from that the business wears at present." From the point of view of the investor I could find no answer to this and said at once I would recommend the adoption of the dates that seem to me to be the natural ones and having relation not to epochs marked by the Paris contract, but to those marked by that now proposed to be made for Europe.

(2) Regarding the method of determining the capital of the new company. They say if we talk a capital in figures of several hundred million francs and of giving you perhaps 150 or 200 million of francs —

3

everybody would be frightened off from  
it; while in this form it will pass,  
I have had the Gazetteers gone over in a  
hurried way and estimate that we may  
count on <sup>at least</sup> 20,000,000 inhabitants in  
cities and towns of over ten thousand  
inhabitants, which on basis proposed  
would give total capital of 60,000,000  
(3) We remain with the business of  
plants and small towns. I have said  
to Leon that with himself and two  
or three immediate friends who work  
in getting up this combination we  
would form a syndicate with yourself  
any friends you want in, Batchelor, and  
Paskes and myself on terms that  
would make it a good thing. It is  
with this inducement that I have broken  
him off from the Soc. Egyptian Affairs  
group and got him to go to our terms

(7)

as far as it seems possible to get them accepted, should this business be carried through I trust that you will see that this engagement <sup>honored</sup> as I have got it reserved without prejudicing the contract. That is to say in the present state of knowledge of the subject matter here the capitalists we are enlisting would not give a cent more or less that the towns of ten thousand and less are put in or left out. I'm looking about for an inducement of personal interest with which to detach Legu. I hit upon this, and pay him off not only without costing the company anything but in adding to its revenue I make this explanation to take date.

(8) Your percent on factory. They accept the principle of a large compensation for what you propose to give in this connection, but they will not agree to five

(6)

on the gross product  
per cent, they will make some propo-  
sition at next meeting: probably a per-  
centage on profits, I sustained this  
warmly <sup>the 5% on gross</sup> and as forcibly as I could  
but I know it ~~would~~ <sup>will not</sup> be accepted in so  
large a percent on the gross.

(5) The amount of 500,000 francs is  
to be put to credit of the company on  
conclusion of experiments for economy  
now going on at exposition. Could be  
closed ten days from now probably.

The next meeting was fixed for  
Monday or Tuesday on account of  
absence of so many persons from town  
over Saturday and Sunday.

Leon represents in this matter four or  
five banks who will alone put up  
the half million and who will imme-  
diately ~~will~~ proceed to extend syndicate  
to every country in Europe and will



cooperate with us from day contract  
agreed even before signing in making  
relations and securing financial and  
political support.

Yours very truly  
Thomas A. Edison } Rufus Bailey  
President }

CHAS. BATCHELOR

~~39 av. de l'Opera.~~

CABLE ADDRESS

Batchelor. PARIS.

Paris, le Sept 19<sup>th</sup> 1888

My dear Edison,

Received your cable this evening:— Edison Machine works charge Edison Electric Light Co. of U.S. \$500 actual cost to Edison Mach. Wk. \$300 \$50 Edison Electric Light Co. U.S. Charge \$1200 dynamo regulator and sixty full lamps and supply lamps thereafter for \$1 each— Charge Mulhouse \$1.50 per lamp this includes our royalty and copy Siemens' german patent plating carbon & wires. Proff Lötcke who at exposition is our german expert see him. " The clause (50 to Edison Electric Light Co. U.S.) I don't understand; please explain:

In view of the fact that Swan charges 25 shillings for each lamp I think I shall make a uniform charge of \$1.50 per lamp delivered free on board in New York all over Europe until the regular company is started and got its agents out working

Yours Batchelor

P.S. If course you will put everything free on board in New York Batchelor

Blank No. 2.

To be completed and  
filled in by the  
Transmitter.

CABLE MESSAGE.

11/21

THE WESTERN UNION TELEGRAPH COMPANY.

Check *22 Paris*

IN ALL CABLE MESSAGES received for transmission must be written on the Message Blank provided by this Company for that purpose, under and subject to the conditions printed thereon, and on the back hereof, which conditions have been signed, in or the name of the Transmitter.

A. H. BROWN, Secretary, ROBERT GREEN, President

*E. Kraside*

Received at **791 BROADWAY**  
*Sept 20 1881*

*My Has a Union Co-5 Ave  
Camp me has without secrets are they included  
in letter mail separate prices everything  
relating to System Swan Charges 1/2  
dollar*

[illegible]

From  
"Batch"  
Sept 20. 81

Paris

7 Oct 1887

My dear Sir,

Since the date of my last letter it has been quite impossible for me to take any time to write as to what was going on & I do not know where to commence, but will give you some points.

(1) Regarding Mr Fabbie Mr Lewis made the suggestion that we should meet and after some days we had an interview at Mr Fabbie's Hotel. On Mr Lewis's suggestion <sup>was</sup> the understanding <sup>was</sup> that Mr Fabbie that everything that passed was confidential I made a full statement of the plan of organization which had been called to you. The following day Mr Lewis & I spent the whole of the forenoon discussing matters with Mr Fabbie, the result of all which was that Mr Fabbie decided to send no further cables to you & requested me to return 20 per cent in the syndicate I was forming for his friends. He left for London the same night. After receiving your cable giving this 8 days that we requested I called on Mr Lewis & advised him of it & at the same time told him that I wished to make the request for the reserve of 20 per cent in the syndicate being formed by him for friends whose names would be given at the proper time. I asked Mr Lewis to write to Mr Fabbie to tell him this & have him cable whether his request for the 20% was firm before I

(1)

should get too far along in the business & when a withdrawal might make trouble. Mr. Fabbie replied to this that he had asked it of Mr. Harjes & that he himself could say nothing about it. Mr. Fabbie called on Mr. Winthrop at Mr. Harjes & understood from him that Mr. Harjes had left for the States & that he Mr. Winthrop could say nothing regarding it. I have therefore advised Mr. Fabbie this morning that the request for the 20 per cent is withdrawn. Mr. Fabbie told me this morning that Mr. May advised him to do nothing with us as Mr. Harjes' relations would enable him to get better terms than those that we proposed.

(2.) In regard to lighting the Opera we understood Mr. Garnier to say in the first interview ~~to say~~ that he had the <sup>sum of</sup> 100,000 francs at his disposition for experiments in the lighting of the Opera & the fable to you said therefore that the expense of showing the Edison would be covered by the Administration. It appears however that there was a misunderstanding & that Mr. Garnier said 500,000 fr. instead of 100,000 fr. a mistake very easy to make for foreigners in talking with a person of such rapid & indistinct utterance as Mr. Garnier. We have however gone ahead & made Contracts for a Robey lamp which Mr. Hattetot prefers to all those he has seen here & the engine is due to arrive in Paris tonight or tomorrow morning. Agreements were also made for the erection of the necessary attachments & everything will be in place ready to start up on

the 18<sup>th</sup> instant. Two or three days after these arrangements were made we understood indirectly that some questions had been raised regarding the safety of the Plants. These questions were however thoroughly examined before any Committee <sup>in the Opera House</sup> was made. ~~It~~ Arrangements read in the telephones to Mrs. Balthazar. Unless the clause in the French Law of Patents which says that the Inventors may introduce with the permission of the Minister of Agriculture & Commerce without prejudice to two Patents first, the models necessary for construction in favour of the Artists-patented & 3<sup>rd</sup> Artists ordered by the authority of the State. As Mr. Garnier is the Architect of the Opera the administration of which is directly attached to the Ministry of Public Works no questions can arise as to harm to Patents and orders coming from him officially that Arrangements both as to go ahead without any concern as there was no possibility of any danger. It sometimes happens that persons who are of no use in doing things & in helping to go forward are of great use in pointing out defects. This did not happen to be the case in this instance & in the course of 3 or 4 days without any steps being taken by us the rumours & fears of damage from precipitated action were dispelled & it was clear sailing. I wish to say that so far as this remark has any personal application it does not apply to M. Gervais whose Council has been very useful & it is needless to say prudent in

all respects. I heard a couple of days ago that  
some late business had been stirring up some difficulty  
for me with Mr. Berger. I called on Mr. Berger &  
told him very bluntly what I had heard & received  
from him the warmest assurance of his regard &  
consideration. I took occasion at the same time to  
request him in future should any questions arise  
regarding the Exposition to address Mr. Battelet & not directly  
to avoid misunderstandings which suggestion he saw the  
force of & said he should be very careful to regard. The  
day before yesterday we called there on you requesting  
the shipment of a small plant to Strasbourg to be  
employed in lighting the Interior of the Station. The  
number of lamps required will be 3500 & the engagement  
of the Company is that if the lamp works they will  
introduce it in the Station at Strasbourg at Metz & at  
Mulhouse in each of which a similar number will be  
required. The director also said that their adoption of  
it would lead to its adoption in the new University  
which is about being finished & which will require 3000  
lamps. The adoption in these important points will  
give the advantage of prestige & will secure the field  
against competition for Alsace Lorraine, Baden & the  
districts immediately neighbouring. The order was  
procured through a young man connected with the  
German Administration of Telegraphs & who has shown  
a great activity & interest in the matter & who will  
himself make the installation at Strasbourg as he



studied thoroughly the system as shown at the  
expositions.

Regarding the negotiations in progress I make no  
remarks in this letter as it is understood that a definite  
reply will be made tomorrow on the various points  
that have been under discussion. It would be quite  
useless to take up space in going over these at  
present.

I have arranged with Mr. Bouty the gentleman recom-  
mended by Mr. Gorman as after himself the most eloquent  
lecturer on scientific subjects for delivering some lectures as  
soon as the work of the Jury shall be concluded. These lectures  
will be given under circumstances and in places as will secure  
a large and choice audience and will be illustrated with  
apparatus taken from the exhibition.

Mr. Lowrie has made some arrangements with Professor  
Porter regarding England. After consultation with Mr. Lowrie I  
had a long interview with Prof. Porter yesterday at the  
conclusion of which he expressed himself as ready to join with  
the Edison interest wholly. I have talked over this interview with  
Mr. Batchelor and Mr. Lowrie and will advise you more fully  
regarding it when it shall have been fully concluded as it  
will probably be tomorrow. You will have received copies of  
the "Illustration" and sundry other journals in which articles  
have appeared during the last two or three weeks. A series of  
two or three will appear in the Journal des Debats commencing  
next week, written by Mr. De Perville. I have taken for

next week the first page for a portrait of Edison another page  
for illustrations showing the different pieces making up the system  
of electric lighting and a page of text one column of which is  
biography and two in explanation of the system. I have also  
begged for the following week a page of illustration taken from  
the photograph at Mount Park and the week following the  
Grand Hotel and the Landing as lighted by the Edison light.  
We are now preparing a pamphlet which has been waiting the  
preparation of designs showing the essence of your battery and  
making full explanations of the light. Will probably have this  
printed in German, Italian and French and electrotyped so as  
to produce any number of copies. Mr. Barker yesterday made a  
suggestion which had been made before by Mr. Babcock  
at which both of them are probably at work today in realizing  
to send the preparation of a brief statement of the principles  
of your system to be placed before the jury. I propose to add  
within a certain part of the matter that will enter into the  
pamphlet and to make a special and earlier distribution of  
that amongst the members of the jury and all through the  
Exhibition putting it on the tables where catalogues are sold  
and elsewhere to be picked up by everybody that goes into the  
Exhibition free of charge.

We have had a series of articles passed through the  
leading German journals including the official Gazette. The  
article for which was prepared by Siemens - am keeping  
copies of these papers but of some of them have only one or  
two numbers and do not locate the file intending to write  
to an agent in Germany to get a number of copies so as to

sent same as French publications are sent to a certain number  
of persons. L'Esprit also today two pages in the Spanish  
Illustrated Journal published at Madrid will have several other  
publications arranged copies of which will be duly sent you.  
Have so many things on hand at present that I cannot take the  
time to write in detail having the services of a stenographer  
only from time to time.

Yours very truly  
J. F. Bailey

Thomas A. Edison Esq.  
65 Fifth Ave N.Y.  
Oct 8th 1887

Series Eight  
15 October 51  
Brideman

My dear Edison,

I just received a cable  
from ~~Ed~~ Tomattini; he wants  
you to send him machines, Repet.  
of 300 Lamps ad omd, he says besides  
that he has made arrangements with  
Messrs Wachtel - I will  
be back at 8 o'clock with original  
Despatch

Very truly Yours  
Eugene Brideman

William Horroffs Pute Romane

Florence Oct 18<sup>th</sup> 1887

Thomas A. Edison Esq

65 - 5<sup>th</sup> Avenue New York

Dear Sir,

Your favor of Aug. 5<sup>th</sup> was duly received & greatly appreciated by me. I am very much pleased to hear of your success & hope you may get leisure from time to time to inform me of your operations -

The copy of Prof. Pacinotti's machine was brought to Florence by him about a month ago & after I had seen it & its operation, which as far as I could judge was very satisfactory, it was shipped from Leghorn directly to you by my agent here Mr. Franklin Torrey. This machine is in every respect an exact copy of the first one Mr. Pacinotti invented, excepting that it has two driving wheels instead of one.

The vessel it was shipped on was the "Syrian" which sailed from Leghorn

in the 27<sup>th</sup> ult<sup>mo</sup> & passed Ancona on the 10<sup>th</sup> inst.

I send you by the same fast as this letter a pamphlet published by Prof. Pacinotti on his machine & I enclose a translation of a note given me by Prof. A. Dall'Es who for many years was professor of Physics at the University here but having now retired from said post in has devoted himself entirely to industry & has set up a manufactory of physical instruments in this city.

He is a very fine man & fully capable of attending to anything in his line.

Hoping to hear from you soon of the arrival of the machine in good condition I only have to add that I have drawn on you, as you directed, through my bankers here Messrs. Dupresne Freres & Messrs. Despret Morgan & Co. N. York for the sum of Sterling 21.00 - £20 being the

amount I have paid for the Machine  
& shipment at Leghorn & L. - cas fare  
portage &c -

Hoping all this will meet your  
wishes & approval

I remain yours respectfully  
Edgworth Porres

Empire Light

Oct. 18. 81

L. Porres

I want copies  
of these made  
I send to P. B. drawing  
attention to Prof. A. Dall.  
Remarks  
Feb 24th

[ENCLOSURE]

"It may be observed in regard to the present state of electric illumination in Italy,

The principal objection is the inconvenience of interruption in the light even when using the Siemens regulator & in addition to this objection there is, in the gas lockoff light, that of the noise & the occasional extinction of a lamp. The system of simple incandescence is certainly preferable & there being many large Communities & Companies strongly disposed to adopt the Electric light, if one free from the above objections could now be offered to them, they would certainly adopt it. And in many places in Italy, water power could be used & transmitted to the great centers by electricity. It would be well if Mr. Edison sent out here several machines & regulators with which practical trials with happy result could be made. A Company could easily be formed with the necessary capital to the undersigned feel qualified to meet all exigencies (Signed) A. Ball & Co.

Aug 6<sup>th</sup> Nov 81 Exposition

**PALAIS DE L'INDUSTRIE**  
Salles 24 & 25  
*DIRECTEURS*  
**M.M. CHARLES BATCHELOR**  
**OTTO A. MOSES**

Paris, le 20<sup>e</sup> Octobre 1881

*M. M. Pustins & Bailey*

My dear Edison -

Send a bill for all the  
material you have shipped to me for  
Lamp factory so that if necessary I  
shall know what to charge the new  
Company for it \_\_\_\_\_

The opera house magnets were all damaged by the switch board being placed in the same box and the switch handles were of course all broken off This may seem incredible before but the reason is that the whole box gives in every direction when being handled - the forces for the magnets are not so strong as the ones sent with my first



Exposition Internationale d'Electricité

1904  
PALAIS DE L'INDUSTRIE

Salles 24 & 25

DIRECTION

M.M. CHARLES BATCHELOR

OTTO A. MOSES

LUMIÈRE ÉLECTRIQUE EDISON

*Paris, 1er*

*18*

Représentants de M<sup>r</sup> EDISON

*M. M. Puskas & Bailly*

33, Avenue de l'Opéra. 33

*machine and the extra one you  
subsequently sent me — I also  
now find that the new armature  
you sent me not only did not fit  
the machine it was intended for  
but the shaft is also too small  
to replace the armature I lost in  
the Opera house — Can you not  
fix this so there will not be so  
many alterations?*

*Yours very truly*

*Batch —*

European Light  
Paris, Oct 26 1881

My dear Edison

Conny

My passage having  
been taken for the 20<sup>th</sup> or there abouts again  
takes + paid for & Alaska on the 29<sup>th</sup> I  
was a few days ago brought face to face  
with the fact that your company, based  
here would require time which  
was incompatible with my sailing now  
as had written to Edison foreseeing the  
knowing that my partners have a right  
to have me at home now unless I  
am earning something here for them,  
suggesting a way in which your in-  
vitations company might pro-  
vide a contingent interest to jus-  
tify my staying. When I saw I must  
either stay or go without finishing the  
business, I telegraphed my firm here  
an answer which confirms a re-  
cent letter of Edison - or rather my  
impression from that letter - that

no one interested in the European  
Company considers it of suffi-  
cient importance that I should  
stay to give me any tangible  
inducement.

Alas! in the words of a great  
chronicle "they know not what  
they do!!"

It is still time for me to go  
& read Liverpool - my feelings  
& interest draw me home! but  
I am going to stay another  
month - because "ye know  
not what ye do!" -

I have submitted the question  
to Balderson & Bailey & leave  
them to communicate their  
opinion of the advisability  
of my going -

As to the matter of prices  
I am well settled - it seems

2.)  
So we less important  
to stay, & that I might  
adjust my personal  
inclinations to you (I mean  
the Confip) without but  
<sup>the B.B.</sup>  
Ray differ

I am going to stay a few  
leaving all questions until  
my return) because, I would  
wish my other men to do  
the same & we if I  
in ignorance were about  
to make <sup>a similar</sup> mistake -

If you were alone in this  
matter I should have  
passed a word but should do  
all that was required - leaving

by an interest for subsequent  
adjustment. But you are  
not alone & after yourself to  
Mr Bailey I am now doing  
more to make the profits of the  
association of some value  
than ever has been done for  
me before - And I have no  
interest, nor any <sup>other</sup> ~~interest~~ but  
the expectation of an ordinary  
net work professional fee  
from a company which never  
you has paid anything to anyone  
(that I ever heard of) -

To this I have added a true  
friendship to Thomas Alva  
Edison & also a very  
true friend

J.P.L.

CHAS. BATCHELOR

43, Rue de la Harpe,  
211 Rue Buloz,

CABLE ADDRESS

Batchelor. PARIS.

Paris, le Oct 27 1881

My dear Edison,

In your letter of Oct 9<sup>th</sup> you ask an explanation of what Sprague said. You misunderstand; I meant, that when he was selling his patent he thought the parties that it was being bought for was the Edison Company but on the completion of sale he knew perfectly well that it was the E. I. Co. I've just received your telegram about retaining counsel of howry leaves. I have persuaded him to stop as it would I think be a very bad step at this stage to let him go. It would almost hurt the business. He says now he will see it out. I've just written Eaton about money matters will you read his letter? If you have anything on my private life due to me you might send me a little as by the time you get this I shall be about busted. I have decided that our factory shall not be near Paris as everything is too dear. I have a number of places to go and see and expect to drop right into harness as soon

as the contract is signed — I don't think there is any combination with the Swan and Faure battery people. I had a long talk ~~about lamps~~ to Mr. Phillips last night about the subject and he decided that it would take 1,000,000 lamps to supply the railroads as he proposes in England, and these renewed twice a year. He wants to get our lamps and I told him that in quantities our lamps could be sold cheap and we could give him 10,000 per day if he wanted. He is inclined to work them at 20 candles so I told him if he required it we could make special lamps suitable for burning 20 candle power and to suit his battery although I told him he would find out that what looked in a Swan lamp to be 20 candles turned out in Photometer to be only 13; and that is actually so, as Parker and Crover actually tried them in our photometer. — When Abortion gets back see him and get all details he can explain matters from being intimately mixed with the jurists. I found him as you described Mr. D. Am. Glad he has done so well for us; however Forester will explain all this to you — I wish you would personally. Thank Freeman

if he calls on you as he has worked inde-  
 fatigably to show off our things to the best  
 possible advantage and at all times, also  
 another American Commissioner Lieut  
 Maclean if he calls on you  
 - shall attend to payment of Guinean Elections  
 matter -

Yours  
Butcher

P.S.

Our applications are mounting  
 up tremendously after we are settled  
 we shall be able to do lots of business -



[FROM SAMUEL INSULL]

Oct. 30th,

Messrs Puskas & Bailey,

Boite de l'Opera,

Paris, France.

Dear Sirs:--

I beg to enclose you herewith acct of  
the Edison Machine Works for \$779.30 together with  
bill of lading for plant shipped to Strasbourg.

They have drawn on you at ten days sight for Frs.

\$163.55 centime in favor of Drexel, Morgan & Co. of

this City being exchanged at 5.271

Yours truly,

Blank No. 8.

No. 461.

CABLE MESSAGE.

654

THE WESTERN UNION TELEGRAPH COMPANY.

B. Par

Oct 31

ALL CABLE MESSAGES received for transmission must be written on the Message blank provided by this company for that purpose, under and subject to the conditions printed thereon, and on the back hereof, which conditions have been agreed to by the sender of the following message.

A. B. BREWER, Secretary.

NORVIN GREEN, President.

2. Chnoside  
Shas ck Edison  
65 Fifth Ave NY

Received

791 B. OADWA

Oct 31.

188

When did you send data for engineers  
always asking for it  
new standard

~~By~~ Dynamo fifty four hundred dollar  
actual cost thirteen hundred light

# Exposition Internationale d'Electricité

PALAIS DE L'INDUSTRIE  
Salles 24 & 25  
BOULEVARD  
M.M. CHARLES BATCHELOR  
OTTO A. MOSES

LUMIÈRE ÉLECTRIQUE EDISON

*Paris, 1881* Oct 31 1881

Représentants de M<sup>r</sup> EDISON

*M. M. Pushkin & Baileys*

33, Avenue de l'Opéra, 33

My dear Edison

The machines at the Opera house are running splendidly, but there is this trouble with the spiral; after a good 5 hours run with full load on they all rub on the magnet head — there is clearance enough in the middle of the armature and all along except at the end where the commutator is and I have to file all <sup>machines</sup> out on that end very considerable — You cannot tell this in the shop unless you run them 5 hours with full load — Another thing, after such a run you will find lots of the brass wires a little loose and these ought to be soldered again as they are liable to damage your armature if one should accidentally get loose I take the precaution now to solder them again in between your solderings as I think you solder too far apart — What are you doing about making other size a 200 light machine ~~and a 100~~ for a belt would be good? Also for small machines? Johnson was here yesterday and I lighted up

Exposition Internationale d'Electricité

PALAIS DE L'INDUSTRIE  
Salles 24 & 25  
SINGAPORE  
M.H. CHARLES DATCHELOR  
OTTO A. MOSES

LUMIÈRE ÉLECTRIQUE EDISON

*Paris, 1st*

*18*

Représentants de M<sup>r</sup> EDISON

*Mr. M. Pashins & Bailey*

*35, Avenue de l'Opéra 33*

*the opera foyer for him in the afternoon —  
The foyer is very fine but in my opinion the 250 full  
lights I have in the Grand Escalier at the Exposition  
(showing off the pictures so well as they do) are a  
fine exhibition of lighting — there is very much  
better satisfaction in running a lot of lights from  
one big machine than bothering with a lot of  
kells & commutators*

*Yours  
Respectfully*

New York, Nov. 2nd. 1881.

65 Fifth Ave.

Mr. Charles Batchelor

33 Avenue de l' Opera, Paris.

Dear Sir:-

Referring to your request as to the prices of the various articles used in my system of electric lighting I beg to state as follows. The cost of the lamps is thirty eight cents although under my contract with the Edison Electric Light Co. I am compelled to sell them at thirty-five cents to them. The reason of this difference is that in starting my lamp factor I was put to very great expense in experimenting.

The estimate of the cost of tubes and the laying of the same is as follows,

Estimated & actual net cost prices.

Laying of tubes, labor three cents, material two cents,	5 cents.
Digging, filling & paving	per mile 15 "
Feeders, No. 1, costing 1,639,890 circ. mills, \$13,312	\$3. 90 per ft.
1 1/2 "	1,286,419 " " 11,344 2. 60 "
2 "	802,976 " " 12,566 2. 38 "
2 1/2 "	671,362 " " 9,134 1. 73 "
3 1/4 "	481,937 " " 5,808 1. 10 "
Conductors 3 "	262,951 " " 3,379 2. 64 "
4 "	182,884 " " 2,481 4. 47 "
5 "	107,289 " " 1,900 3. 38 "
6 "	66,581 " " 1,578 2. 28 "
7 "	33,015 " " 1,251 2. 22 "
Service box & cover together with joints of copper	06
and trunk board pieces for No. 3 tubes	\$1.82
Tag " " "	2. 63
Cross " " "	3. 35
Coupling " " "	1. 40
Elbow " " "	1. 70
Feeder couplings " " "	2. 20
elbow " " "	2. 60
Cross " " "	2. 50
Cost of tape per lb.	3. 35

18ws

295

Estimate for Central Station outfit for 1000 H.P. plant:

This estimate does not include the required foundations  
or alterations in the building.

This estimate does not include the required foundations or alterations in the building.

Blank No. 2.

No. 438 CABLE MESSAGE.

546

## THE WESTERN UNION TELEGRAPH COMPANY.

Check.

To Paris  
Edison Mfg.  
Co. - save

All CABLE MESSAGES received for transmission must be written on the Message Blank provided by this Company for that purpose, under and subject to the conditions printed thereon, and on the back hereof, which conditions have been agreed to by the sender of the following message.

A. R. BREWER, Secretary.

NORVIN GREEN, President.

Received at

791 BROADWAY

Nov 5th 1881

We believe that the contract is being made with honorable parties and that questions of detail necessarily remaining after its completion or that may arise in working under it will be fairly arranged. We are assured and believe that the capital of the several companies

Blank No. 2.

No. CABLE MESSAGE.

## THE WESTERN UNION TELEGRAPH COMPANY.

Check.

All CABLE MESSAGES received for transmission must be written on the Message Blank provided by this Company for that purpose, under and subject to the conditions printed thereon, and on the back hereof, which conditions have been agreed to by the sender of the following message.

A. R. BREWER, Secretary.

NORVIN GREEN, President.

Received at

791 BROADWAY

1881

will be increased to any figure that may be shown desirable in the development of the business

Lowrey Hatchelor Parker  
Bailey

To guard against mistakes on the lines of this Company, the sender of every message should order it repeated; that is, telegraphed back from the terminus of said lines to the Originating Office. For each repeating, the sender will be charged in addition, one half the usual tolls of this Company, on that portion of its lines over which such message passes.

This Company will not assume any responsibility in respect to any Message beyond the terminus of its own lines; and it is agreed between the sender of the following Message and this Company, that said Company shall not be liable for mistakes or delays in transmission or delivery, or for non-delivery to the next connecting Telegraph Company, of any unrepeated message, beyond the amount of that portion of the charge which may or shall accrue to this Company out of the amount received from the sender for this, and the other companies, by whose lines such message may pass to reach its destination; and that this Company shall not be liable for mistakes in the transmission or delivery, or for non-delivery to the next connecting Telegraph Company, of any repeated message, beyond fifty times the extra sum received by this Company from the sender for repeating such message over its own lines; and that this Company shall not be liable in any case for delays arising from interruptions in the workings of its lines, nor for errors in cipher or obscure messages. And this Company is hereby made the agent of the sender, without liability, to forward any message over the lines of any other company to reach its destination.

This Company is not to be liable for damages in any case, where the claim is not presented in writing, within thirty days after the sending of the message.

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[TO SIGISMUND VON KLEIST]

I am still confined to the house  
by illness so that I shall not  
have the pleasure of seeing you  
before your departure. I hope to  
be out in a day or two. And will  
advise you as soon as there is  
anything new.  
8 Nov. 1881. Bailey.

*Ad*  
CHAS. BATCHELOR  
25, Rue de la Harpe  
33 an de l'Opera  
CABLE ADDRESS  
Batchelor. PARIS.

E. E. L. Co. E.  
Paris, le Nov. 8<sup>th</sup> 1887  
Batch

Edison,

Dynamo machines.— Received your telegram about boring out dynamo larger. I would suggest that the copper washer that is soldered to the wire and fastened to the brush holder in the small dynamo be a casting as—  
as three or four of mine have broken off at times—



Lamps. I have to make a complaint against the lamps sent for the Opera house as out of 420 half ones I run there I lose 5 every night and I don't run them at all too high the lamps are not by any means a good shape being doglegged and bent in every shape in fact they seem to me to be a lot that the factory was glad to get rid of. Their shape I don't so much care for as the chandeliers are about 20 feet from floor but their life I do care for as we cannot put one in in day or night-time without them knowing it. This of course nobody knows except yourself —

Yours 'Batch'

✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓  
- y i e y

Exposition Internationale d'Electricité

PALAIS DE L'INDUSTRIE  
Salles 24 & 25  
DIRECTEURS  
M.M. CHARLES BACHELOR  
OTTO A. MOSES

LUMIÈRE ÉLECTRIQUE EDISON

*Paris, le 14 Mars 1886*

Représentants de M<sup>r</sup> EDISON

*M. M. Pustaus & Buntz*

33, Avenue de l'Opéra, 33

*Monsieur P. von Kleist  
Hôtel du Nord  
Berlin*

*Monsieur, Nous accusons réception de votre lettre  
du 12<sup>e</sup> à laquelle nous répondrons plus en  
détail dans quelques jours. Le syndicat est  
définitivement constitué et s'est désigné la  
compagnie qui se chargera de toute la correspondance.  
Monsieur Bailey est encore indisposé et est absent  
chez lui - Nous gardons votre lettre par devant  
nous pour vous écrire plus longuement.  
Kleist a reçu Monsieur nos sincères salutations,*

*Pustaus & Buntz*

*File*

PALAIS DE L'INDUSTRIE  
Salles 24 & 25  
SINGAPOUR  
M.M. CHARLES BATCHELOR  
OTTO A. MOSES

Exposition Internationale d'Electricité

LUMIÈRE ÉLECTRIQUE EDISON

*Paris, le 14 novembre 1881*

Représentants de M<sup>r</sup> EDISON

*Mr. Mr. Pustins & Bailly*

33, Avenue de l'Opéra, 33

*1881*

*My dear Edison,*

I received your telegram last night saying "Draw me at sight". I have therefore done so this morning through Drexel Morgan & Co but at 2 days sight. I shall endeavour to make this pull me through but am not quite sure whether it will or not. I find the people here very loth to pay me a salary even for my living expenses they saying that it is the duty of the Edison Light Co to do that. If I am on the board of Directors (I believe the law allows them each to be paid here) I shall of course get a little and shall trust that at that end you have been able to get something for our labor.

1881-11-15

(Translation)

Between

1. Mr. Thomas Alva Edison residing in New York, represented by Mr. Joshua F. Bailey, now residing in Paris, 33 Avenue de l'Opera, under powers hereto annexed.

2. The Edison Electric Light Company of Europe, Limited, of New York, represented by Mr. Joshua F. Bailey, (of the above address) under powers hereto annexed, and hereinafter called the Light Company.

Mr. Edison and the Light Company acting conjointly and jointly and severally

of the one part

and Mr. Charles Porgès residing at No. 2 Rue Blanche, Paris,

and Mr. Elie Léon residing at No. 1 Rue Lesueur, Paris,

of the other part

It has been declared as follows:

Mr. Edison and the Light Company being desirous to secure the turning into value of the patents taken out and to be taken out in the different countries of Europe, hereinafter enumerated for the inventions of Mr. Edison for the measurement, distribution and application of electrical currents for the production of light and motive power; and Mr. Porgès and Mr. Léon being disposed to undertake the financial and commercial arrangements required for that purpose the parties (hereto) have mutually agreed as follows:--

## ART. 1.

Mr. Porges and Mr. Léon undertake to form within a period of six weeks from the date hereof three joint stock companies under the provisions of the law of July 24th 1907, namely:

1. The Manufacturing Company.
2. The Company of Exploitation.
3. The Isolated Installation Company.

Which Companies shall work and act under the hereinafter prescribed conditions:

## ART. 2.

The duration of the Company of Exploitation shall be fifty years, with a capital of One million of francs, divided into Four hundred shares of Two thousand five hundred francs each, which shall <sup>not</sup> be divided into a greater number of shares of smaller amount during five years. Mr. Edison and the Light Company undertake henceforth jointly and severally to bring to such Company all the patents already taken out such as they are without any other guarantee than that of their existence; by Mr. Edison for the said inventions as well as for all materials and apparatus which can be utilized for producing light, or motive power, and for the sale thereof as regards working or manufacture. Mr. Edison and the Light Company also undertake to bring to the Company all patents for new inventions to be taken out by Mr. Edison during

five years from the date hereof.

This covenant shall only apply to the following countries:

1st: France and the French Colonies.

(Paris and its neighborhood, Versailles included, excepted).

2nd: Belgium.

3rd: Denmark.

4th: The German Empire.

5th: Austria and Hungary.

6th: Russia.

7th: Italy.

8th: Spain (The Spanish Colonies excepted)

These being all the countries in which Mr Edison has taken out patents for the inventions hereinabove written; the United Kingdom of Great Britain and Ireland, Portugal, Sweden and Norway are not comprised in this assignment.

Furthermore Mr Edison and the Light Company undertake during five years dating from the day of the signature hereof to give to the Exploitation Company all such descriptions, drawing or models as may be necessary for taking out patents for all inventions or improvements in all the countries comprised in this agreement, and after the expiration of the said five years Mr Edison expressly undertakes for a further period of twelve years

and without other guarantee than that of their existence to furnish whatever may be requisite for taking out patents for inventions made by him during that period, and such patents shall as hereinafter mentioned, be offered to the Exploitation Company.

All such patents shall be taken out in the name of Mr. Edison, but the proprietary rights of the Exploitation Company in the said patents shall be the same as those hereby granted as to existing patents. All expenses incurred in furnishing descriptions, drawings or models shall be borne by the Exploitation Company as well as all fees and expenses incurred and paid for the taking out of new patents from this date.

All the patents heretofore taken out and forming the object of the present bringing in of capital shall be delivered to Messrs. Porges and Léon within 15 days from the date hereof to be handed over by them to the Exploitation Company. These patents shall remain in possession of the Joint Stock Company and shall be at the disposition of Mr. Edison and of the Joint Company for the exercise of their rights as hereinafter specified. Should such delivery be delayed from any cause whatsoever beyond the said fifteen days the period allowed to Messrs Porges and Léon to form the said Companies shall not commence to run until the date on which the said delivery shall have been made, but shall then be reduced to four



weeks from the date of the said delivery.

Mr. Edison and the Light Company also undertake when requested to do so to co-operate in the fulfilment of the legal formalities necessary to secure to the Exploitation Company the exclusive right to said patents already taken out or which may hereafter be taken out and which form the object of this agreement.

The Light Company is prohibited from working directly or indirectly the inventions of Mr. Edison as respects electric lighting or motive power in all European Countries in which the legislation does not allow patents.

It is understood that said patents as regards all other objects than those above specified remain the sole property of Mr. Edison and the Light Company, and that the Exploitation Company shall only have exclusive ownership in respect to the objects hereinabove expressed.

If the laws of other countries than France do not allow divided ownership in patents in the manner herein provided for, Mr. Edison and the Light Company shall transfer to the Exploitation Company the exclusive right to the use of said patents for the objects determined in the recital and Article 2 hereof.

#### ART. 3.

The Exploitation Company has in view the sale of patents, the granting of licenses-- in one word-- the putting into value in any form whatsoever of the said

patents &c., subject to the following conditions.

The capital of the said Company shall be employed conformably to the decision of the Board in respect thereto, in such experiments, installations and advertisement &c., as it may deem expedient having in view the attainment of the object just above indicated.

In return for these grants by Mr. Edison and the Light Company the Light Company shall receive founders shares in the Exploitation Company giving it the right to 80 per cent. of all profits realized by the said Company but subject to the following reservation.

All the profits shall be assigned as follows:

1st: To the payment of the general expenses.

2nd: To the legal reserve of one-twentieth of said profits.

3rd: To the usual percentage allowed to the Board.

4th: To the re-payment of the shares at par.

5th: To the founders shares and dividend.

bearing shares to replace the repaid capital shares.

The profits accruing to the founders shares and to the dividend bearing shares shall be divided in the following proportions whatever may be the increase of capital.

Eighty per cent. to the founders shares.

Twenty per cent. to the dividend bearing shares.

## ART. 4.

In all sales or conveyances of patents or of the rights attaching thereto the rights hereby reserved by Mr. Edison and the Light Company shall be expressly preserved.

The total sale of one or more patents in a European State or the granting of licenses for the whole of one of these states, shall not be valid without the express consent given in writing of the Light Company.

When the price of patents for a town or region shall be fixed at a certain amount, that amount shall be determined according to the number of inhabitants as explained in the following paragraph:--

It is understood that when there is a question of granting permission to work these patents for a whole town or a whole district by supplying electric currents from a common central station, the Exploitation Company shall only grant such concession to a local company having a share capital of at least two millions of francs for each hundred thousand inhabitants (or in such said proportion) in the same territory, and the price to be paid for such concession shall not be less than 45 per cent. of such capital. The necessary agreements shall at the same time be entered into to give the Exploitation Company a like proportion of all future increase of capital of such Local Company.

## ART. 5.

The Light Company reserves to itself the right to accept or decline all agreements which the Exploitation Company may desire to make under the last paragraph of the preceding articles, and without such acceptance no agreement shall be valid, and therefore the Light Company shall signify its acceptances or refusal either directly or by its duly accredited attorney in Paris within fifteen days from the date of the notification which shall have been made to it of the draft of the agreement by the Exploitation Company at the office of the Light Company in Paris.

ART. 6. If availing itself of the powers reserved to it by the preceding article the Light Company should decline the draft agreement proposed by the Exploitation Company, the Light Company shall be bound to find a purchaser within three months of the date of such refusal on more favorable conditions than those proposed by the Exploitation Company and to offer such purchaser for the approval of the said Company. In such event the Exploitation Company shall always have the right to 20 per cent. of the profits arising from all agreements which may be made by the Light Company. If on the contrary, the Exploitation Company should be unable to find a purchaser within the space of three months on more favor-

able conditions the Exploitation Company shall be entitled for all agreements subsequently made by it for that end as from the first agreement proposed by it to 5 per cent. of the profits by way of indemnity to be paid by the Light Company in addition to the above mentioned 20 per cent.

ART. 7.

The Exploitation Company when granting concessions for said patents or any of them to other Exploitation Companies, shall stipulate (unless the laws of the country in which such Companies are organized forbid) that one third at least of the members of the Board of such Companies shall be nominated by the Exploitation Company which undertakes with the Light Company to reserve to the latter the option of nominating at least one of the three directors which may be nominated by the Exploitation Company.

The Exploitation Company shall reserve to itself the right of controlling the parties acquiring patents or licenses for patents so that such patents shall only be used in accordance with the concession granted them.

ART. 8.

The number of members of the Board of the Exploitation Company shall not be less than three. The Directors shall be nominated according to law for a period of three years, and the Light Company shall have the power to nominate one-third of the statutory members of such Board,

## ART. 9.

The Exploitation Company should it wish to proceed to make isolated installations or experiments in Paris must, for that purpose, obtain the consent of M. Léon or his assigns to whom the Light Company has given the option of forming a company for the working of Edison Electric Light patents in Paris, and its neighborhood Versailles included under the terms of a contract dated

The Exploitation Company shall also undertake in case Messieurs Porges and Léon or their assigns should form a company for the working of Edison Patents in Paris to re-assign to such company the installations made by the Exploitation Company and that at the cost price plus 15 per cent. profit.

The Exploitation Company shall undertake to bear the expenses and fees to be paid by both parties for this agreement, as well as the expenses of the experiments which shall subsequently be made at the Paris Opera House should they not be paid by the parties to whom the right of working such patents in the City of Paris and its neighborhood, including Versailles, may be granted.

## ART. 10.

In case M. Léon or his assigns should not form within six weeks of the date hereof the Company which they have the option of forming for the working of Edison Electric Light Patents in Paris and its neighborhood including

Versailles the right of working said patents in Paris and its neighborhood including Versailles shall belong to the Exploitation Company and shall be governed in all respects by the conditions of this agreement.

Mr. Edison and the Light Company shall have the right to become parties together with the Exploitation Company to any proceedings for infringement of said patents or any other proceeding in respect to said patents which the Exploitation Company may consider necessary to institute or which may be instituted against it.

ART. 11.

For all other new inventions made by Mr. Edison during the period of twelve years following the five years provided for by Article 1, or for all patents taken out for the same inventions in the countries comprised in this agreement, Mr. Edison shall offer the sale of the patents to the Exploitation Company for the same end and within the same limit as for existing patents.

In case Mr. Edison and the Exploitation Company cannot agree upon a price, the parties hereto undertake to have the same decided by arbitration.

ART. 12.

Messieurs Porges & Léon undertake at the same time to form a joint stock company under the provisions of the above mentioned law with a capital of One million five hundred thousand francs for the manufacture of the material

and apparatus necessary to work the above named patents.

The said Manufacturing Company shall issue and hand to the eight Company founders shares entitling it to 50 per cent. of the net profits whatever may be the increase of its capital.

The Exploitation Company shall authorize the Manufacturing Company to manufacture under said patents, but no sale shall be made in any of the above named countries to any person who shall not have obtained a license from the Exploitation Company.

The Manufacturing Company shall supply all the necessary apparatus to the Exploitation Company, or parties licensed by it at a profit not exceeding twenty per cent. and Mr Léon engages for himself and his principals in virtue of the contract of June 1891 to authorize the said Manufacturing Company to have its manufactory in Paris.

The profits of the Manufacturing Company shall be appropriated as follows:

1. To the payment of the general expenses.
2. To the legal reserve.
3. To the payment of 6 per cent. upon the capital laid out.
4. To the usual allowance to the Directors.
5. To the deduction of a tenth of the net profits for the redemption of the share capital.



The remaining profits shall be divided as follows:--

1. Fifty per cent. to the founders shares.
2. Fifty per cent. to the share capital.

ART. 13.

The authority to be granted to the Manufacturing Company shall not be exclusive, but Messieurs Porges & Leon or the Exploitation Company as their licensee may organize or cause to be organized other Manufacturing Companies in France or abroad for the same objects and under the same conditions but reserving in all cases the same proportion of profit to the Light Company and causing such proportion of profits to be represented in those countries where the laws allow it, by founders shares equivalent to that allowed by the laws of France.

ART. 14.

Messieurs Porges & Leon also undertake to organize another Company for the working or sale of licences to work isolated plant outside of installations for which the light is supplied by a central station.

Such Company shall have a capital of One million francs and shall create and remit to the Light Company founders shares securing to the latter sixty per cent. of the net profits.

The profits of such Company shall be appropriated as follows:--

1. To the payment of the general expenses.
2. To the legal reserve of one twentieth of such profits.
3. To the usual customary allowance to the Directors.
4. To the re-payment of the shares at par.
5. All remaining profits shall be divided as follows:--

Sixty per cent. to the said founders shares  
and

Forty per cent. to the dividend bearing shares.

The special aim of said Company shall be to work or authorize the working of patents in towns with a population of ten thousand inhabitants or under as well as all installations of isolated lighting even in towns of more than ten thousand inhabitants.

This right to make installations of isolated lighting in any town whatever its population shall cease when a central station shall have been established in such towns by the exploitation Company which Company or its concessionaires shall then have the exclusive right in such towns dating from the day on which such central station shall be established without prejudice to the rights previously acquired by the licensees of the Isolated Installation Company.

The Isolated Installation Company shall in no case grant working licenses en bloc but shall always make such grant the <sup>or</sup> subject of a special concession to each consumer.

The Light Company shall have the right to nominate one-half of the statutory directors of the Isolated Installation Company.

It is understood by derogation from the preceding paragraphs of this article that the Exploitation Company shall have the right to authorize the working of towns of ten thousand inhabitants or under by a central station, and it may grant the whole of such towns to a local company organized for that purpose. The profits arising from such grant shall wholly belong to the Exploitation Company and not to the Isolated Installation Company.

It is clearly understood that such grant of towns of ten thousand inhabitants or under, can never take place except for isolated towns separately, and in no case for several towns together.

#### ART. 15.

The Exploitation Company shall grant the necessary authority to the Isolated Installation Company as well as to the Manufacturing Company in order to give to each of said companies the requisite rights to avail within the limits of the licenses which shall be granted to them of all

existing or future patents.

ART. 16.

In order to carry out this agreement, MR Porges chooses as his residence No. 27 rue de la Chaussée d'Antin Paris and MR Léon chooses No. 1 rue Lesueur Paris as his abode. And the Light Company and MR Edison elect 33 Avenue de l'Opera, Paris, with privilege of jurisdiction before the Courts of the Department of the Seine

Executed in duplicate in Paris Nov. 15th 1901 in presence and with the consent of MR G.P.Lowrey, Counsellor-at-Law of New York and of MR Charles Batchelor.

Read and Approved.

(Signed) J.F.Bailey.

(Signed) G.P.Lowrey.

Chas. Batchelor.

Read and Approved.

Read and Approved.

(Sd.) Charles Porges.

(Sd.) E. Leon.



Exposition Internationale d'Electricité

LUMIÈRE ELECTRIQUE EDISON

Paris, le 19 November 1881

Représentants de M<sup>r</sup> EDISON

Mr. M. Puskas & Bailey

33, Avenue de l'Opéra, 33

PALAIS DE L'INDUSTRIE  
Salle 24  
M. CHARLES BACHELOR  
VITO A. ROSEN

My dear Edison,

I find a big fault  
in the Opera machines — All commu-  
tators on all of them are made so that  
after running a little the coppers  
either raise up or the micas lower down  
and we have to file down the copper  
till they will no longer raise up —  
the difficulty is that when the coppers  
raise up above the mica the space in  
between gets filled with copper from  
the brushes and crosses the machines.  
Some of my commutators from this  
cause have got almost red hot —  
they don't seem to be made anything  
like so solid as the old machines  
in the commutator

Yours  
"Bachel"

Very truly yours  
Charles Bachelor

120.2.1

*Answer*

PALAIS DE L'INDUSTRIE  
Salles 24 & 25  
directeurs  
M.M. CHARLES BATCHELOR  
OTTO A. MOSES

Exposition Internationale d'Electricité

LUMIÈRE ÉLECTRIQUE EDISON

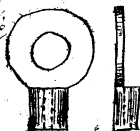
*Paris, le 19 Septembre 1889*

Représentants de M<sup>r</sup> EDISON

*M. M. Pastus & Baileys*

33, Avenue de l'Opéra, 33

*My dear Edison:—*



*Suggestion:—*

*that the copper connec-  
tion that fastens the  
wire to the brush arm  
be made of castings  
or as the copper washers  
break often when you are moving  
the brushes both together*

*Yours*

*"Batchelor"*

*Copie*

CHARLES PORCÈS  
2, Rue Blanche.

Paris, le 11 Novembre 1881

à Monsieur

Monsieur Thomas A. Edison

Président de la Edison Electric Light Company of Europe Limited  
65 5th Avenue

New York

Monsieur,

J'ai eu très honneur de pouvoir m'adresser  
à vous, aujourd'hui, pour l'exécution définitive des  
conditions que j'ai signées avec votre honorable Fondé  
de pouvoirs M<sup>r</sup> Bailey, et dont M<sup>r</sup> Conway nous a  
joint une copie.

Je m'occupe à attacher d'un commun accord  
avec M<sup>r</sup> Bailey les Statuts des 3 Sociétés que je  
dois fonder avec M<sup>r</sup> Bailey. Les noms de ces sociétés  
sont: 1. La Compagnie Continentale Edison, Capital \$1,000,000.  
2. La Société Electrique Edison & Société pour l'éclairage  
à l'Académie internationale Capital \$500,000.  
3. La Société Industrielle et Manufacturière Edison,  
Capital \$500,000.

Afin que je l'ai expliqué à M<sup>r</sup> Bailey  
Bailey, nous devons éviter de nommer la Electric  
Light Company dans nos actes constitutifs la  
simple mention de cette Société américaine



CHARLES FORCIS

mon débiteur de 10000. - pour droit d'usage  
ment. Je vous prie donc pour me faire attester  
la formation des 3 Forcés de me renvoyer  
le plus tôt possible la procuration ci-jointe  
de donner et signer par moi et légaliser par  
le consul français. Vous m'avez coûté une  
grande partie de temps et d'argent en  
signant l'original français ci-joint, dont  
vous pourriez facilement vous procurer une  
traduction anglaise à votre usage.

En attendant pour vous remerciant vous  
dite. Je vous prie de me renvoyer  
de vous en mon nom, au reste si  
illustré dans le monde entier.

Veillez après Monsieur l'assu-  
rance de ma reconnaissance distinguée.

(Signé) Charles Forcés

Monsieur l'ami à M. Lucey, dont j'ai  
fait officier tout le long de la guerre.

Je vous prie de me renvoyer  
le plus tôt possible la procuration ci-jointe  
de donner et signer par moi et légaliser par  
le consul français. Vous m'avez coûté une  
grande partie de temps et d'argent en  
signant l'original français ci-joint, dont  
vous pourriez facilement vous procurer une  
traduction anglaise à votre usage.

Exposition Internationale d'Electricité

PALAIS DE L'INDUSTRIE  
Salles 24 & 25  
direction  
M.M. CHARLES BATCHELOR  
OTTO A. MOSES

LUMIÈRE ÉLECTRIQUE EDISON

*Paris, le* Nov 23 — 18 81

Représentants de M<sup>r</sup> EDISON

My dear Edison, *Mr. M. Pushkin & Bailev,*

*33 Avenue de l'Opera 33.*  
I find that there is great objection  
with Porges and Leon to having Pushkas on the  
boards of directors of all companies - They are  
willing to have him on the "Société Manufacturière  
et Industrielle Edison" and at a pinch (such as  
Bailey not getting well) they would allow him on  
all, but they are very anxious that he should  
not be pushed on by your preemptory order in spite  
of their wishes - This places me in a very un-  
enviable position inasmuch as I have to get Pushkas  
to help me in everything nobody else having any  
idea of "push" except Bailey and unfortunately  
I don't think we can have his services for at least  
3 weeks more - They have no objection to him  
except that he goes into "air-balloons" etc and has  
no financial standing - I think you had  
better insist on him being on the "Société Man-  
ufacturière et Industrielle Edison" and Bailey on  
all - As for myself you must do as you think  
best if you insist on me going on all I shall  
have to sell some stock to keep my place as  
for the "Compagnie Continentale Edison" I should  
have to hold 5 shares 12500 Francs.

# Exposition Internationale d'Electricité

LUMIÈRE ÉLECTRIQUE EDISON

PALAIS DE L'INDUSTRIE  
Salles 24 & 25  
DIRECTEURS  
M. H. CHARLES BATCHELOR  
OTTO A. MOSES

*Paris, 16*

*18*

Représentants de M<sup>r</sup> EDISON

*W. W. Bushong & Bailey*

*2*

33, Avenue de l'Opéra, 33

for the "Société Manufacturière et Industrielle Edison"  
20 shares 10,000 francs and for the "Société Electrique  
Edison" 20 shares 10,000 francs — I am going  
to ask Mr Walker if he would be willing to serve  
for a time if it was offered to him and I must also  
ask some one else in order to advise you, if it is  
necessary to get someone else — I do not know  
whether the people I ask would like to become  
shareholders in the thing and I don't believe we  
have any to give away — Mr Lowry may explain  
these things to you better than I can and you  
can call me any advice you may think  
best — I have ~~secured~~<sup>found</sup> a good manufacturing  
establishment near Rouen, and I have to go  
and secure it myself, as they won't do anything  
till they are organized. — Will write you again  
in this Puskas and I go out there tomorrow.

P.S. "Patch" — Mr Forges said they had sent a "power" to you to have  
you make your power of attorney like it — It would  
please them to do as they want if Lowry has no objection.  
Forges says he would show me copy but has not done  
so yet. or (1 Enclaire)

1881-11-27

CHARLES PORCÈS  
2 Rue Blanche.

Paris November 28<sup>th</sup> 1881.

Thomas A. Edison Esq.  
President of the Edison Electric Light Company of Europe  
Limited.

65 5<sup>th</sup> Avenue

New York

Via Queenstown

Dear Sir,

I wrote you the 21<sup>st</sup> of inst. and am very  
glad to give you the following news:

Last Friday at 4 o'clock the Foyer of  
the Opera was lighted, the inferior part by Edison  
lamps and the upper part by the "Lampe soleil".

The "Ministre des Beaux Arts", M<sup>r</sup>. Antonin Proust in  
company of M<sup>r</sup>. Garnier, Architecte of the Opera,  
Hauvossé, Director of the Opera, Baudry and  
Delavray, famous painters and authors of the pictures  
in the Foyer, came to examine the effect. I  
explained to the Minister, who is one of my  
political friends, the "Edison lighting". M<sup>r</sup>. Durrieu  
(President of the "Crédit Industriel" who has bought  
the "Maxim" and "Wendelmann" Patent) explained to

him the 'Marsini' and 'Wesserman' system, and  
Mr. Lehard, senator, explained the 'Lampe Soliel'.  
The result was, that the Minister told us  
officially that the whole Opera shall be lighted  
by the 'Edison' and 'Lampe soliel' system and  
that we shall make him propositions.

I am very happy to have won the battle  
against 'Marsini' and to have seen your  
representant at this occasion.

This is a great moral victory, but there  
are still many battles to fight. The 'Projet de Pei'  
said that he would never allow to put steam  
engines in the cellars of the Opera and that  
we must use 'gas motrices'. In this way we'll  
depend from the gas. What is your opinion  
upon that?

You see that we must make haste  
to form our companies. I am quite ready;  
the only thing we want is your money. I don't know  
(and Mr. Batchelor does not know either) to



*File*

PALAIS DE L'INDUSTRIE  
Salles 24 & 25  
BUREAUX  
M.M. CHARLES BACHELOR  
OTTO A. NOSES

Exposition Internationale d'Electricité

LUMIÈRE ÉLECTRIQUE EDISON

*Paris, le 28<sup>e</sup> Novembre 1881*

Représentants de M<sup>r</sup> EDISON

*Mr. Mr. Pustous & Bailay*

33, Avenue de l'Opéra, 33

*Known as a Edison Envoy  
65 Fifth Avenue  
New York U.S.A.*

Dear Sir

We last wrote you on the 16<sup>th</sup> inst. - We confirm our telegram of 26<sup>th</sup> inst. Cannot give names officially for publication until statutes signed - probably few days: as it is not considered judicious on this side to have the names of the syndicate before the public until the statutes are definitely signed; this will be done now in a very short time. Messrs. Corz & Léon advise us that they have written to you direct, but in order to work harmoniously it would perhaps be just as well for you

Edison

2.

to refer them always to us, as they  
might at any given time communicate  
with you about matters of which we  
would be ignorant and thus create  
confusion and perhaps surprise.

Yours truly  
Parker & Bailey

Edison

W. H. P.



(COPY)

*File*  
Hotel Mengelle,  
75 rue Royale, 75,  
Bruxelles.

December 1st 1891.

My dear Mr. Lowrey.

Your most kind and friendly note from L'pool reached me in London just before my departure for here, where I have been for some time concluding all the arrangements incidental to the formation of a company to work our Belgian Patents. I am glad to say my task has just been finished, and I go to London on Sunday next. I have got a powerful group of Antwerp and Brussels bankers and merchants to form our company, which was duly registered on the 23rd ult. as the "Société Belge et Hollandaise d'Electricité" Capital Francs 5,000,000-- in 20,000 shares ordinary of 250 for each and 4000 founders parts, of which we (the Force and Lumiere Co.) get 10,000 shares ordinary and 4000, or all founders shares which are entitled to 45 per cent. of all profits left after paying 6 per cent. on the ordinary shares. All the capital has been subscribed firm, and the company now starts as the first "baby" or offshoot of our mother company.

The time has now come to make electricity go and produce positive results; in short, to raise it from the region of speculative science into that of sound commercial enterprise. I need scarcely say that those who can now take advantage of the furore for Electric Companies and get first into the field of practice will have an immense pull over future comers. This is what we are pushing for and what I have to some extent achieved in a small way to be sure, but this is a small country and I am quite satisfied with our beginning. During the course of the next week or ten days I hope to bring out our English Company with a million sterling capital, and if one may be permitted to judge by the excitement which I am told by telegraph from London, existed today on the Brighton line experiments of railway lighting, I think our financial success in Great Britain is assured. I have only the telegram as yet, but it would appear the trials, which for three days past have been going on, and the public inauguration today were a marked success. I shall send you the newspaper reports and no doubt your people in London will inform you direct as I sent invitations to Messrs Fabrie & Johnson to attend.

We had also a very satisfactory result at the Society of Arts meeting on the 23rd in London. Professor Thompson read a paper on the Storage of Electric energy and Secondary batteries, wherein Faures accumulation had a very high place and was the only one which entered into practical competition, having kept the lecture hall well illuminated by 30 of Edison's B.Lamps fed from 32 cells during the whole evening. I send you copy paper.

In the legal field we had another triumph on Tuesday last, when the Solicitor-General, with Mr. Webster Q.C. and Mr. Pollard in consultation with Messrs. Carpmael, Johnson, Professor Ayrton, Sir William Thompson and others after an exhaustive criticism of all existing patents and inventions relating to this matter, declared that Faures Patents were valid and tenable; 1st, because the invention itself was new, and 2nd, because its application was unquestionably novel. Their official opinion to this effect will be delivered in writing in a day or two and I shall send you copy.

I have carefully and cautiously made enquiries in Paris and here regarding the standing of Mr. Porges, and I

am glad to be able to assure you that you could not be in better hands. He has means, good friends, and is personally an honest man. *Viola mes renseignements.* I find he has inaugurated his new Bank and in the address to his shareholders he alludes to the Edison contract for Europe, but says his Bank will only risk 50,000 frs. or \$10,000 as their share of the capital. This of course means nothing, and is merely put forth as a sort of assurance as to the prudent nature of the transactions the Bank means to embark in. No doubt Mr. Forges group is sufficiently strong to do it alone and the Bank only enters for form sake. I have written to Mr. ~~Chagny~~ <sup>Chagny</sup> about the origin of his incandescent lamps and as to whether there was any publication made at the time, many years ago, describing the invention; I have no reply from him as yet, but I am assured there was a communication made to the Académie des Sciences and may be found in the annals or proceedings of that body. I shall try to get at the date and have a search. I however have not much confidence in his accuracy.

As soon as our English Co., shall have been

formed we mean to tackle the Savoy Theatre with Faures accumulator and Edison's Lamps, and go on to other theatres; but I think Mr. Edison will come to give us a lamp of 20 to 30 candle power with only the same resistance and length of carbon as his B. Lamp. This will be indispensable for certain uses and places.

Then again I look to him through your Good self to produce a 100 candle lamp for street lighting as a competitor to Arc lights; and you will see ere very long that this must be the solution of the problem for public lighting.

There is no official declaration of the corporation of London re the Arc being thrown out; but I know from reliable sources it is to come and soon. And now I have given you all the news I can get on such matters. I am going to ask you to write me and say if in your contract for the transfer of the European Patents, you have included Holland (Netherlands) There are no patents there, and if you have not specially mentioned it in your transfer it becomes free to you - as it is and would to any one else, to use Mr. Edison's processes and inventions. I ask this, because my step son-in-law, the

Badon de Van den Bogarde de ter Bongge is a very distinguished engineer and has great influence at the Court there and being interested with me in electricity, would like to have a permission even of a negative kind; of course giving consideration for it, from Mr. Edison to employ his system there; can you help me in this direction? Pray convey my kindest regards to Madame Lowrey, and hoping soon to have the pleasure of hearing from you, I remain

Very sincerely yours,

Ricarde Seaver.

P.S. Your friend Mr. Swynyrd did not call during my stay in London, but may have done so since I left; I shall be very pleased to see him on my return. I presume he was at Brighton today.

Kind regards to Col. Mackay. Please inform him of all that goes on which may interest him.

Please address, London, Conservative club,  
St. James Street, S.W.

European Light,  
33 Avenue de l'Opera  
Paris, Dec. 14.. 81

My dear Mr. Edison, *M. B.*

Your cablegram  
in reply to one from me, telling me to  
ask the Batchelor about returning, was  
promptly acted on. Mr. Batchelor  
said he had received no instructions  
from you about me, that the  
Companies were not formed, and  
that he had no money belonging  
to the European Company. So I  
waited; and have since received  
your dispatch saying, "I place  
50 shares European to your credit  
and continue your <sup>optional</sup> pa-  
rent six months; for which accept  
thanks."

Before Mr. Lowrey left I had been  
asked by Mr. Porges if I would  
accept position with the new  
Companies, to represent them in  
the formation of sub. Companies,  
on a salary and a per centage.

I replied that I was so disposed, if according to Mr. Edison's wish; but that I could not enter into new arrangements without having received advices from you on the subject. I have not received any, either direct or through Mr. Batchelor, beyond the dispatch in answer to mine, in which I ask "if I shall return immediately." Your reply being interpreted to mean you wished me to remain here, I addressed a note to Mr. Porges saying I would put my services at command of the new Companies for a salary and 2% in the proceeds paid to the mother Company, by sub. Companies to be formed in Germany, provided no other agent was appointed for that country. They have refused my proposition.

Though it was suggested before hand, I asked Mr. Batchelor if he would support my proposition at the

meeting, which was held last night. He said he would, with all his might. The meeting has taken place; my proposition has been rejected; no substitute was offered; no reason was given; and one who was present, has just told me Mr. Batchelor did not open his mouth on the subject, although the conversation was mostly carried on in English.

With these facts before me (and you) I am placed in rather an uncomfortable position. Please telegraph me on receipt of this, if it is your intention to have me here.

I trust you have seen that proper recognition has been shown me by the European Company, in the form of a cash honorarium, which would be most acceptable at this moment, as I am as dry of funds now as I was when I refused to accept the



check I wrote you about.

Hoping to hear by cable something that will be definite about my movements, and your intentions, I remain

Faithfully Yours,  
Otto Loewen

After writing the above I saw Mr. Batchelor and asked him what he had done about the letter of application for agency (the negative answer to which being in my pocket.) He said "he had called it up at the meeting, but he did not know what action had been taken."

CHAS. BATCHELOR

Paris, le 14 Decembre 1881

1881-12-14

38 ~~Chas. Batchelor~~ ~~Chas. Batchelor~~

CABLE ADDRESS

Batchelor. PARIS.

My dear Edison,

I have succeeded in putting all our men (that is, Henrich, Liebel, Force, Cecheson, Kappeler, on the payroll of the different companies from the 1st of November. In regard to Force during the time he is with me I wish you would continue to pay his wife \$12 per week as you have all along done and I shall refund you the same every three months from his salary. — Also don't fail to let me know how much you have paid Mr. Liebel so that I can refund you that —

No doubt you think we are a long time getting started in manufacturing but it has been very difficult indeed to find the right place — I have been in no less than 53 mills and factories within 100 miles of Paris and have often thought of splitting it up into 3 or 4 shops, but now I think I have a prospect of getting the building shown in the enclosed drawings. Of course we could not buy this from our hospital but I have been working on it and let my two of our directors buy it and rent it to us which I believe they

2.

will do - It's built of stone and brick and is just as good looking as it is in picture -

It is outside the walls but at such a short distance that it is practically the same thing as being inside - I don't like to say now that I shall have it but I am

making strenuous efforts and the prospect looks good - We have had 2 meetings of an in-

tended board and they propose to meet every night to transact business even

night at 4 p.m. so the ball has fairly opened -

Norges the head and front of the concern is a very peculiar man as

probably Mr Lowry has told you I find however that I can get anything I want

by simply making him believe that he is the originator of the desire to have the thing I want -

On the boards when anything was proposed (no matter what)

he starts off with a loud blustering objection on general principles and succeeds in

satisfying himself in about 5 minutes that the man who proposed it is a damn

fool afterward when the proposer insists he takes up the proposition himself and

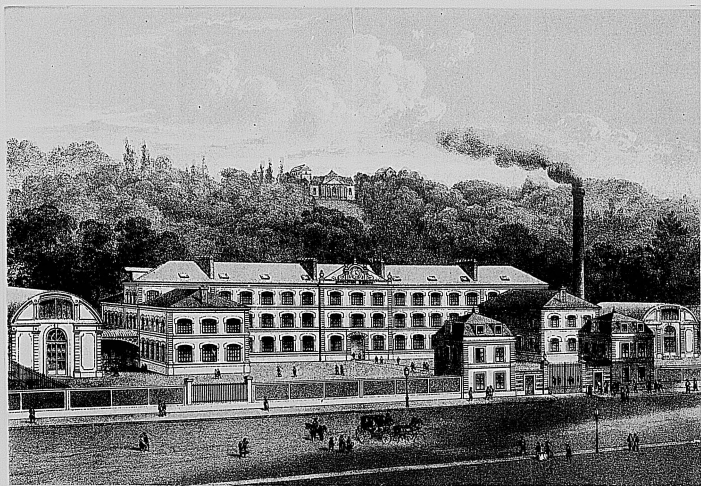
says all you want as if it was his own I have an amicable row over everything ending in my getting all I want -

3.

I have done my best to procure for Dr Moore  
a position in the formation of companies  
for Germany which would be very lucrative;  
and he is now under consideration by  
the boards - I am afraid that Porges  
who was very favorable to him, has been  
literally talked to death by him, and  
feels that he don't want to dother with  
it till everything else is done towards  
factory etc - Mr Bailey who is recovering  
asked me also to tell Porges that it would  
be exceedingly disagreeable to him to have  
to work with ~~Moore~~ ~~that~~ ~~that~~ A thing I  
of course would not do, but it makes it  
hard for me to work for him - He wants  
an exclusive agency for the whole of the  
German Empire with 2 1/2% interest in  
everything, (whether he works or not) and  
all expenses and \$200<sup>per week</sup> besides - Of course  
when this proposition was passed round  
we all with one accord put our pens through  
the word exclusive - Lots of my lamp  
factory stuff I am making outside so  
as to be ready when I have my factory  
tell him to get a Frenchman and loan  
him all the business and I will take him  
tell him I don't want a high salary man

Yours  
Barthel

[ENCLOSURE]



L. Turpin del et lith.

Imp. Lefebvre & Co. Paris

MANUFACTURE D'ARCUES D'ALEXANDRE PÈRE & FILS — LOT DE 20000 MÈTRES DE TERRAIN  
à Ivry-sur-Seine près Paris

Exposition Internationale d'Electricité

PALAIS DE L'INDUSTRIE  
Salles 24 & 25

Directeurs  
M.M. CHARLES BACHELOR  
OTTO A. NOSES

LUMIÈRE ÉLECTRIQUE EDISON

*Paris, le 15 Décembre 1881*

Représentants de M<sup>r</sup> EDISON

*M. M. Puckas & Bailey*

33, Avenue de l'Opéra. 33

*Monsieur Sigismund von Althist  
Hôtel du Nord  
Berlin,*

*Monsieur,*

Nous sommes désolés de votre  
honneur au 13<sup>e</sup>. M<sup>r</sup> Bailey étant encore  
malade nous sommes obligés de remettre à  
quelques jours la réponse que vous nous  
demandez. Nous vous enverrons dès que nous  
serons en mesure de le faire.

Veuillez agréer, Monsieur, nos civilités empressees,

*Puckas & Bailey*

*En*

1881-12-19

CHAS. BATCHELOR

52, Rue de la Bruyère

TELEGRAPHIC ADDRESS  
Batchelor. PARIS.

Paris, le 19 Decembre 1881

Mr. A. Edison Esq.  
65 5<sup>th</sup> Avenue -  
New York.

My dear Edison,

Major Eaton Rindley  
took \$1500 - worth of bonds for me and  
I sent him cheque on what is now the  
"Trusted" New York Bank - If convenient  
will you pay him the \$150 necessary  
and charge to my account -

I have had a very unfortunate  
mischance at the Opera House My filer  
gave out so that I had to put a whole  
new set of tubes in we are working  
all hours to finish it but it makes  
a very bad impression.

Yours "Batch"

Pill

My dear Mr. Edison,

Englewood Light  
14 Rue de Valenciennes  
Paris, Dec 21. 81

Mosco

I am just in receipt of this telegram from Mr. Batchelor of Dec. 20. 81. Edison cables me to tell you that in view of my cable to him of the 16th, his cable is so strange that I cannot reply without full explanation by mail.

I suppose this is in answer to my dispatch to you "Companies decline service. Telegraphic position and salary you offer." By this time you have received my letter showing how I had been treated by the Companies here, as I have nothing to add to my dispatch, except that I will admit I had not expected to be compelled to ask you to name the position and salary I was to receive.

Wishing you yours and the staff a happy New Year, I am

Faithfully yours  
Otto H. Moscos



New York 21<sup>st</sup> Decr 1881

My dear Sir

I received a cable  
from Geneva with an order for  
camps at your price. - Please  
telephone me to Mr. Leckert  
what time you will be down  
town tomorrow morning and  
at what time I can see you  
as he wants them shipped at  
once.

Yours very truly

Wm. A. Scherer Esq

OFFICE OF A. ISELIN & CO.,

48 WALL STREET,

P. O. Box 910.

New York, December 21<sup>st</sup> 1881

Thomas A Edison Esq  
65 5<sup>th</sup> avenue City

Dear Sir,

We have received a telegram from Geneva  
with an order to pay your bill of about  
\$ 200 against bill of Lading for 300 lamps,  
for account of Mr. Furthman

Yours truly  
A. Iselin

RECEIVED  
DEC 21 1881

Paris the 26<sup>th</sup> December 1888

Thomas A. Edison Esq.  
President of the Edison Electric Light Company of  
Europe (Limited)  
65 5<sup>th</sup> Avenue New-York  
via Guenestown

Dear Sir,

We hereby beg to inform you, that  
we have requested the "Credit Lyonnais" the  
day before yesterday, to cable you  
\$5000 (say five thousand Dollars)

At the same time we paid the  
amount to the "Credit Lyonnais" for the debit  
of the "Société Electrique Edison".

You will receive accordingly the sum  
by the New-York branch of the said bank.

We are, dear Sir,

Yours respectfully

BANQUE CENTRALE  
DU COMMERCE & DE L'INDUSTRIE

Charles Dreyfus, Paris

CHAS. BATCHELOR

52, Rue de la Bourse

CABLE ADDRESS

Batchelor. PARIS.

Paris, le Dec. 24<sup>th</sup> 1881

Major Baton

65, 5<sup>th</sup> Avenue New York.

My dear Major,

Yours of the 9<sup>th</sup> Dec. to hand enclosing  
list of 22 French, 18 Belgian, 21 Italian, 11 Spanish, 3  
German, and 5 Danish patents - the patents them-  
selves have since arrived and are all right.  
I have also received this morning yours of the 13<sup>th</sup> enclosing  
certificate of incorporation - I have also received your  
list of isolated plants which I am much obliged to you  
for, and hope you will continue to keep me posted in  
them - I will send you my lists every month and although  
you have a good start ahead of me I am going to beat you.  
Just - In your letter of Dec 14<sup>th</sup> you say at bottom  
of first sheet "there are two in number one for the company  
& receipt for Denmark, and the other for Odessa" signa-  
ture for Denmark" I presume you mean the former for  
Russia, as I have only one power for Russia and one for  
Denmark -

We have not as yet received the "receipt for Denmark  
on French patents" mentioned by you in yours of Dec 9.

Very respectfully,  
Chas. Batchelor  
Howe

Exposition Internationale d'Electricité

PALAIS DE L'INDUSTRIE  
Salles 24 & 25  
DIRECTEURS  
H.M. CHARLES BATCHELOR  
OTTO A. MOSES

LUMIÈRE ÉLECTRIQUE EDISON

*Paris, le 200 9<sup>e</sup> 1889* 18

Représentants de M<sup>r</sup> EDISON

*M. M. Puchet & Bailly*

33, Avenue de l'Opéra, 33

My dear Susul

Please put in our  
code the following:—

Absolute:— Chas Porges—

Absolution:— Edw. Lebey— Directeur Comp<sup>te</sup> Continental  
Edison

Absolve:— Louis Rau— ditto.—

Absorb:— ——— Manier — ditto ———

Adjacent:— Compagnie Continentale Edison

Adjoining:— Société Electrique Edison —

Adjoiner:— Société Industrielle et  
Commerciale Edison —

Bravado:— Compagnie Cont.<sup>te</sup> Edison Stock —

Brawl:— Société Electrique Edison Stock —

Bray:— Société Ind<sup>te</sup> et Comm.<sup>te</sup> Edison Stock —

Samuel Susul  
65 5 Avenue  
New York

Yours

*Chas Batchelor*—



Gouraud

London.

Can purchase European  
light at seventy. you better  
buy some through Drexels

Edison

Dynamo to Hamburg  
Then ~~you~~ ~~see~~  
get <sup>it</sup> admitted into  
France by author  
order proper  
authorities

~~Partially Dyna~~  
Assembling dynamos  
Super test Wednesday  
Dynamo drive 22 Success



Could not  
associate working  
drawings ~~as~~  
for ~~the~~ ~~small~~ large  
~~dynamo~~ ~~no~~  
found no difficulty  
in constructing  
from Clarke's  
drawings. Will  
ship model soon

# Foreign orders

## List drawings sent Baschler

Counter balance for press	Aug 10 1881
Wheel and Pinion steam press	Aug 30 <sup>th</sup>
East Iron detail	" " May 31 <sup>st</sup>
Detail	" " June 3 <sup>rd</sup>
Clutch arrangement	" " May 31 <sup>st</sup>
Grand shaft for	" " "
Details etc	" " June 3 <sup>rd</sup>
Front view of the sewing machine	
Side " " "	" " "
Detail " " "	" " "
Carriage " " "	" Aug. 6 <sup>th</sup>
Detail " " "	" Sept. 15 <sup>th</sup>
Committee with sewing machine	Oct. 3 <sup>rd</sup>
" " " "	" detail 12 <sup>th</sup>
" " " "	" " 5 <sup>th</sup>
" " " "	" " 4 <sup>th</sup>
Plan for upper die sewing machine	

Back end commutator, incl.  
 Drill jig. Tapping jig.  
 Jig for drilling armature shafts.  
 Landing held for fluting commutator shells.  
 Front view steam power press

Side " " " " "  
 Steel details steam power press May 14<sup>th</sup> 1881

Base for " " " " " 20 " "

Cast Iron details " " " " " 24 " "

" " " " " " 23<sup>rd</sup> "

Wrought " " " " " Sept. 28<sup>th</sup> "

Wrought iron and steel details steam press May 1<sup>st</sup> "

Gear housing steam power press Oct. 18<sup>th</sup> "

" " " " " May 14 " "

" " " " " " " "

Wrought Iron details " " " " " " "

Cast Iron details treadle steam power press May 31<sup>st</sup> 1881

Wrought Iron details " " " " " June 5<sup>th</sup> 1881

Fly Wheel " " " " " May 26<sup>th</sup> "

Steam nut for die plate " " " " "

Die detail " " " " "

Steel die bushing " " " " " Oct. 24<sup>th</sup> "

Abbott & Bailey  
came to friendly  
terms. Bailey  
proposes submit  
all negotiations to  
Abbott and Lowry  
- Barker working  
hard for us.

Syndicate  
Cahen d'Anvers  
& Credit Industriel de Paris

400,000 Cash  
350,000 <sup>full power</sup> Shares of the  
Societe Generale d'Electricite  
de Paris  
Capital 25 Million francs  
Shares to be at least at par  
on the Bourse of Paris  
25% per cent of profits of  
Syndicate.

The whole thing to be  
paid & delivered ~~not~~  
within 4 weeks from  
date but 1500 Lamps  
to burn before payment

They agree to light up  
immediately in Paris

B. L. L. L.

Europe

Memo by

Giedermann

(1891)

Remarks of President Charles Ferges.

It rests with me gentlemen, to say something upon what we have already done and the course we intend to follow in the direction of the Central Bank of Commerce and Industry. It is well at once to state that we intend to conduct business but not politics. We have the good fortune to count among our administrators some political men justly esteemed who have come to aid our business and not to mix with questions which they understand how to treat in another sphere. It is true however, that we are all Republicans, all partisans of the actual government, all friends of progress and light. Our first work will be to enlighten the world (laughter) that is to, say, to put in practice the patents of Mr Edison for the application of Electricity for the production of Motive power and light. These patents we shall introduce over the whole European continent except Portugal and Sweden. The organization of companies of this kind is very complicated on account of the considerable divergence which exists between the legislation (laws) of France and America. The negotiations have been laborious but we have at last a formula which has given satisfaction to Mr Edison and to ourselves.

Without going into the details of our future operations, I would say that we intend to form three companies. One will bear the name of the Edison Continental company, which will be charged to make available the processes of that inventor in all the countries for which we <sup>are</sup> authorized to treat. To this effect particular or special companies will be formed at Vienna, Berlin, Rome, Madrid, in a word, in all the principal cities of Europe with participation of our company in the profits.

The sum of a million which constitutes the first issue of shares is not very considerable, but you know that small beginnings often lead to great results.

I would not conceal from you that in its essence this business is even very contingent, but if we surround ourselves with all possible precautions, and act only after a careful examination of the reports presented by our engineers, we believe that we can attain happy results. The eulogy of Mr. Edison's inventions is superfluous, but never-the-less other inventors might discover something better. In putting all the chances against us, but one million could be lost in which our bank could only lose 500,000fr. if the Board of Directors accept my proposition. According to approximate calculations there is a great chance for the 500,000fr. to produce an annual revenue of about the same sum.

The total interest of the Bank in the three companies will not exceed the sum of 175,000fr..

The second company will be a manufacturing company whose works established in the vicinity of Paris, and will be directed by Mr. Bachslor one of the principal co-laborers of Mr. Edison. No rival company will be placed under the direction of so efficient and competent engineer, possessing the most consummate practical experience than he, for, he has followed from the commencement to the end the studies of Mr. Edison and directed during two years at New York similar companies.

I believe therefore, that even should certain processes of Mr. Edisons fall into public hands the possibility of which we absolutely contest, our company would still have a marked superiority over those which exploit the application of electricity for illumination.



3.

Finally, the third company (this multiplicity of companies may appear strange but there are in New York five companies of the same kind as ours and having the same object in view). The third company's object, will be the establishment of isolated plants for the purpose of lighting large stores, railroad depots, printing establishments, &c. In these establishments plants can be put without requiring the sanction of the municipal authorities for opening trenches. This latter company would also be the first to move. We have already a considerable number of orders from various establishments among which I may quote the "Bon Marché" the printing office of La Petite République Française. The Green room of the Grand Opera &c. It seems to me gentlemen that I have said enough to show you that this is no ordinary business affair, and that it presents a serious prospect of profit. Now, as to the course we calculate to pursue in the general management of our Bank I may I believe dispense with by saying, that it will be very discreet. You know how I managed my own affairs for a long time, and how opposed I am to speculation.

*100*

We have in addition certain chances of profit which are not to be despised. We have the good fortune to possess among our largest shareholders, directors of the Bank of Paris of the Comptoir d'escompte, of the Société Générale, of the Banque Franco Egyptienne.

Gentlemen I will no longer detain you and if nobody desires to speak I shall adjourn the meeting, convinced that all of you carry with you the impression that you have just inaugurated a business which has serious prospects of success.

The meeting adjourned at 4.15 P. M.

**1881. Electric Light - Foreign - United Kingdom (D-81-033)**

This folder contains correspondence, agreements, and other documents relating to the establishment of the Edison electric light system in the United Kingdom. Among the correspondents are George E. Gouraud, Edward H. Johnson, and Drexel, Morgan & Company. Much of the correspondence concerns the Holborn Viaduct central station in London. There is also correspondence from William Thomson about his tests of the Edison light.

All the documents have been filmed except for duplicate copies of correspondence and copies of cable messages filmed in Letterbook, LM-001 (Letterbook Series).

E. J. Mink  
29 Regency Street

Westminster, S.W.  
Jan 4<sup>th</sup> 1887



My dear Sir,

We are continually getting enquiries for Swan's <sup>improved</sup> lamps which is identically the same as yours patented by you in this country two months before Swan. Can you put us in a position to supply your lamps? - or if not can we have a few to put on exhibition in our offices here? I think it would be well for you to have your lamps exhibited here constantly in order to

Keep before the public your  
claim as prior patentee.

I thought of going to see  
Col. Gouraud about this  
but have been advised to  
write to you direct.

How is it that not a word  
was said on your behalf at  
the meeting of the Society  
of Telegraph Engineers when  
Swain read his paper?

Kind regards to you  
all at the Laboratory.

Yours sincerely

Alex Muirhead

J. A. Edison Esq.  
Menlo Park N. J.

Memorandum.

From Drexel Morgan & Co.  
Wall St. corner Broad,  
New York, Feb 7 1881

To Dr Moses

Please find this in  
English Electric Light  
Edison & Drexel Morgan & Co.

Mr Edison will please proceed at once to  
have constructed a steam Dynamo capable  
of working about 750 to 850 lights with  
sufficient lamps and other appliances to  
give an exhibition in London. Cost of such  
plant not to exceed \$5000, he is also to  
engage an Engineer to make the installation and  
work the same salary not to exceed \$250 per month

Drexel Morgan & Co.

August 1871

2nd

March 12 1871

to late of Bureau

to late of Bureau

to late of Bureau

to late of Bureau

to late of Bureau

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to late of Bureau

to late of Bureau

to late of Bureau

March 12 1871

I am much obliged by your letter of the 11th inst. referring to a letter from Mr. B. Rhodes, but which I regret to say I had forgotten, through pressure of business, and also to forward you the same, the enclosed letter of introduction from Mr. Rhodes.

May be not trouble you further about sending me a photograph. I am very anxious to see you without delay, and I am sure the pleasure of seeing you will be very great. I am very anxious to correspond with you and to deal with you in the interest of the photograph. Without my intervention.

I am, I assure you, by the simplest means imaginable, reproducing the photograph in pressing with perfect sharpness, certainly, I am sure, and durability, but the means I doubt and doubt of the category of such as would be thought of by any one buying the improvement. Indeed, no improvement have been made.

I have spent interest and time for many years in electrical matters, but one whole time to this subject is also. It is necessary to keep pace with the every day improvement. My friend Mr. Searcy has just been very fortunate in his discovery of light. He has done this.

for £30,000, and  
has to pass a year  
confinement here as  
penance for fourteen  
years.

I saw in the boat  
presented to me by  
Mr Rhodes - giving a  
detailed account of your  
marvellous career,  
that the late Mr  
"George Stephenson" while  
in the States patronised  
you as a juvenile editor.  
This should have been  
mentioned as "Robert  
Stephenson" who then  
would have acquaintance.

The late Mr Robt. Stephenson  
was a personal friend  
of mine - indeed when  
we dined him in  
Westminster Abbey  
I took my best and  
dearest friend. I

myself visited Canada  
soon after his visit on  
the same business - the  
Victoria St Lawrence  
Bridge.

I shall have much  
pleasure in corresponding  
with you if some  
time allow me to  
do so.

I am  
Yours sincerely  
J. P. Stoddard

Thos. A. Edison Esq  
65 St Lawrence  
New York

In London of 18

[ENCLOSURE]

225, Regent Street  
London  
Sept 10th 1881.

Thos A. Edison Esq  
Menlo Park  
New Jersey U.S.A.

My dear Sir,

Mr. B. P. Stockman is a  
Gentleman well known to me  
as a man of very high  
scientific attainments and  
holding both a good social  
and financial position in  
this Country. I have much  
pleasure in introducing him  
to your so favorable notice  
and trust the same may

be mutually advantageous.  
Any favor you can extend  
to him will be esteemed by  
me

I am

Very truly yours  
Richard D. Rhodes

Acad  
12/3/81  
(146)

The Direct United States Cable Company, Limited

16 Broad Street,

New York 12<sup>th</sup> March 1881

L. A. Edison Esq  
Fifth Avenue  
N. Y.

My Dear Sirs,

I have been asked to hand  
you the subjoined telegram which has just  
been received. I shall be glad to forward a reply.

Yours faithfully

J. C. Fuller

Edison, New York.

Swan comes to Glasgow to show  
his lamps at Philosophical Society next week  
and promises to leave several with me for  
private tests in my Laboratory. Could you  
send me dozen of your Standard Lamps  
solely for my private tests; I promise I shall  
"divulge" nothing till I communicate results to  
you and leave your wishes. This telegram  
is from Geymans' office with his and Johnson's cordial  
approval - Thomson



2-14-1881  
"GUTHRIE, LONDON."

6, Lombard Street, E.C.  
London, March 29<sup>th</sup> 1881

J. A. Edison Esq.

35 Fifth Avenue,  
New York.

Dear Sir,  
Electric Light

Enclosed I beg to send you copy of  
a letter I have received from Sir Wm Thompson  
and my reply thereto.

Yours faithfully  
G. R. Gouard

The University  
Glasgow.

18<sup>th</sup> March 1881

Dear Colonel Gouraud

I am sorry that you and Mr Johnson were not able to take the opportunity of seeing the Swan light at Mr Spitzweg's on Monday evening. Mr Pender and Mr Johnson met me there and saw them and were greatly pleased. Mr Swan was here on Wednesday evening and read a paper on his lamps at the Glasgow Philosophical Society. He showed the lamps and every one was delighted with them. He brought them to my laboratory yesterday when I made measurements which perfectly confirmed the statements in his paper.

Mr Johnson I had greatly over-estimated the thickness of Mr Swan's carbons. Mr Swan stated them to be about two inch diameter. Altogether the Swan light is much more perfect and its economy is much better assured than I knew when I saw you and Mr Johnson in London last Friday. I shall be very glad to receive Mr Edison's lamps when they come, and to experiment upon them carefully and give him my results. You and

[ENCLOSURE]

Mr Johnson of course understood  
that I offered to do this quite  
unprofessionally. I wish to  
make the experiment for my own  
private satisfaction, and it will  
be a pleasure to me to communicate  
the results to Mr Edison.

I think you and Mr Johnson  
should try and see the Swan light.  
I could not ask Mr Spottiswoode  
for another appointment because  
this involves getting up steam  
specially; but I have no doubt  
if you were expressing a  
wish to see them that he would  
gladly give you an opportunity.  
I should think he must have very  
many requests to let the Swan  
light be seen, and probably  
he will be taking some opportunity  
of getting up steam to bring  
friends who may wish to see  
the light.

Believe me

Yours truly,

William Thomson

[ENCLOSURE]

March 15<sup>th</sup>

Sir John Thomson Esq.  
The University  
Glasgow

Dear Sir William

Many apologies for not having  
an acknowledging receipt of your letter  
of the 15<sup>th</sup> instant, which was delayed  
in receipt owing to my absence from  
Glasgow. I am sorry that I received  
my telegram only on the morning  
of the 15<sup>th</sup> inst. which was meant to have  
come to Mr. Spottiswoode's  
appointment. Johnson was called suddenly  
to Paris, which fact I telegraphed you  
immediately, to the address you gave us  
when here. Mr. Spottiswoode was good  
enough to give us another appointment  
and Mr. Johnson and I saw the light  
we found it to be very fine, but we  
could find it in respect to the handle  
cover, which seemed to be about one  
third less than Edison's, and the shape  
of the carbon which is obviously not  
bamboo, and I am not surprised that  
those who see the light are delighted  
with it, for certainly it is a very  
charming light.  
I am glad that Mr. Edison  
responded in the manner in which  
he did to your request for the lamp,  
which I trust you will soon receive.  
I should feel obliged if you will  
advise me of their receipt, and so

[ENCLOSURE]

2  
down as you have made your  
Laboratory tests of them I shall be  
glad to confer with you with  
reference to putting them up in  
London if that can be done  
advantageously, possibly having regard to the  
suitable diagrams and Engraving.

I thank you very much for  
the kind advances in which you  
express your interest in this subject  
and while you are good enough  
to say that what you are now  
proposing to do is quite impractical  
I shall feel sincerely that you will  
find it both convenient and  
agreeable in every way, to make  
a professional connection with this  
enterprise as I am sure that  
nothing would be more gratifying  
to Mr Edison. In fact if it will be  
agreeable to you to consider the  
matter at present, I shall be very  
pleased to place before you a  
definite proposal on behalf of Mr Edison  
and those interested with him,  
that you should accept the  
position of Consulting Electrician  
to the Edison Electric Light Company  
on this side of the Atlantic. There  
will be very numerous and  
the undertaking promises to be  
of the most important proportions.  
I shall not of course expect your  
reply to this, until you shall have  
had an opportunity of more  
thoroughly satisfying yourself as to  
the value of Mr Edison's invention.  
Yours faithfully,

THE MERCANTILE AGENCY.

"It seems almost incredible that information so minute, so various, so widespread and so exact should be furnished by THE MIAMI-HERALD AGENCY, for a small subscription, but the fact remains nevertheless, and is a splendid instance of American enterprise, ingenuity, and administrative ability." - The Glasgow Herald, Jan. 30, 1930.

"It is significant of the energy of private enterprise in the United States, to be told that the information embodied in the work of this AGENCY has been collected by not less than 25,000 persons, without any State aid whatever." - The London Times, Oct. 24, 1931.

DUN, WIMAN & CO., 312, 314 AND 316 BROADWAY, NEW YORK; BRANCH OFFICE, 80 WALL STREET, AND PRINTING OFFICE, 148 WORTH STREET

R. G. DUM & CO. AND E. RUSSELL & CO., IN FORTY-FIVE CITIES, AS FOLLOWS:

[illegible]

P. O. BOX 803

NEW YORK, APRIL 15TH 1881.

THOMAS A. EDISON ESQ.,

65 FIFTH AVENUE, NEW YORK.

MY DEAR SIR:-

HERE IS A COPY OF THE LONDON STANDARD RECEIVED THIS

MORNING, CONTAINING A COLUMN OF MATTER ON THE ELECTRIC LIGHTING OF LONDON, WHICH MAY POSSESS SOME INTEREST FOR YOU AND I WROTE TO SEND IT TO YOU.

I TRUST YOU ARE MAKING GOOD PROGRESS WITH YOUR COMPANY . I

SHALL BE READY WHEN YOU REQUIRE IT TO ASSIST YOU IN ASCERTAINING THE

STANDING OF PARTIES APPLYING TO YOU IN CONNECTION WITH IT .

 $\Gamma$   $\Delta$ 

YOURS TRULY

*Erastus Wiman*

SOLE AGENTS,  
"GUTHRIE, LONDON"

2, Lombard Street, E.C.

London, *April 23* 1881

J. A. Edison Esq  
65 Fifth Avenue  
New York.

Dear Edison  
Electrical Light Equipment  
for my house.

When may I expect to receive this. I trust every thing has been put in hand for it. I don't think I shall require to wait for the completion of the engine, as I find a considerable water power at the bottom of my grounds, which can be utilised sufficiently to light all my places. I am having the water investigated and will presently know what power I may expect. Meanwhile I may expect, meanwhile push every thing else

ahead. It is not necessary that we should have the Central Station in London in order to go on with the organisation of our companies. But a few of the lights will be all that is necessary, as soon as I get this business off my hands, I shall have nothing to do but the light and that I think is enough for any one human being.

Yours very truly  
Edw. J. G. G. G.  
Guthrie

CABLE ADDRESS,  
"GOURAUD, LONDON."

6, Lombard Street, E.C. 6,  
London. April 26<sup>th</sup> 1887

W. A. Edison Esq  
65 Fifth Avenue,  
New York.

Dear Edison

Equipment for London.

I sincerely trust you are vigorously acting upon my suggestion with regard to complete specifications of central plant so as to enable me to establish the same kind of works here for the English and foreign business as you are establishing in America. I congratulate you upon your great wisdom in adopting that plan in America and on doing it yourself. I should like to do the same thing here. It is the only possible means of adequately and sufficiently promptly supplying the material with which to occupy the field in advance of others. I wrote these recommendations to Breckinridge sometime ago, and presume they were referred to you. Swan is making great progress; the last news being that he has lighted up the principal street in Newcastle. Already people have begun to speak here of Swan's light and Edison's light, instead of Edison's light and Swan's light. If there be such a thing as the latter, if you will put me in possession of these working specifications you may rely upon my pushing the



2

matter here as vigorously as you are  
pushing it in America. Please confer  
with Drexel upon receipt of this  
and show them my letter, to save  
writing them the same thing. I  
would not have them suppose that  
I wanted you to do anything contrary  
to their wishes in the matter. From  
the tenor of their letters, I think they  
are only too anxious to have the  
business pushed here. But I cannot  
do anything in the way of organizing  
until I have the lamps here. I  
fear that a very large Company is  
forming to work Swan's light.  
Soon as I have some of your lamps  
to show no matter how small a  
scale, I shall proceed to organize  
at once, with Drexel Morgan & approval,  
an Edison Company for each of the principal  
towns in order to enable me to interest  
leading local people, still keeping control  
ourselves. I propose to issue the entire  
capital fully paid and to issue  
Debentures to represent the working  
capital giving as much of the fully  
paid stock with the Debentures as may  
be necessary to raise the capital. The  
amount of stock to vary according to  
time, place, and circumstances.

Yours truly,  
Dictated by G. B. Gouraud  
Hue

P.S. The Central Station ordered for  
London when may this be



New York April 30<sup>th</sup> 1881

Dear Sir,

Please let us know what you wish ~~us~~ cabled to  
McLourant & Co. 1 2

Yountville  
Drexelboro

MEMORANDUM.

6. Lombard Street, &c.  
London, May 5<sup>th</sup> 1881

Thos. A. Edison.  
New York.

Dear Sir,  
Enclosed please find  
copy of letter received from  
Mr. W. Thomson, concerning  
your & Swan's lamps.

Yours truly  
Edward Hare

Copy

The University  
Glasgow.30<sup>th</sup> Apr. 1881

Dear Mr. Boucand.

I have already made some trials, on Mr. Edison's lamps, and though by no means complete, so far as they have gone, the results agree with the particulars specified, on the labels attached to the lamps, and in Mr. Nichol's letter. I am going to make a series of complete and accurate measurements both on Mr. Swan's and Mr. Edison's lamps, which will probably occupy several weeks. I shall write the details when I have them to Mr. Edison so far as his own lamps are concerned.

Without going into any particulars regarding Mr. Swan's lamp, I may say, that from what I have seen, I do not expect to find any difference, which it is impossible for me to test, between them and Mr. Edison's with respect to economy. Either may be pushed to a very high degree of economy by working at sufficiently great intensities. It will be impossible for me or for anyone without months of experience to tell what is the highest intensity to which either lamp may be worked, without counterbalancing the value of high economy of light by wearing out the lamp in too short a time.

I shall send you by passenger train, today five lamps of each of the two kinds. I should have been happy to see Mr. Batchelor during his visit to this country, but I would not trouble him to come to Glasgow on this account, when his time is so very short as it is.

Believe me,

Yours very truly

William Thomson

[ENCLOSURE]

[TO CHARLES BATCHELOR?]

THE UNIVERSITY,

GLASGOW.

May 1. 1881

My dear Sir,

I thank you for  
your kind offer to consider  
and help me in respect to  
the Camp. Although I should  
be very happy to see you  
I do not think I need trouble  
you to come on this account.  
The direction as to how to  
accompany the Camp is

complete and clear that  
 we find no difficulty  
 in working them exactly  
 in the standard conditions  
 specified for them. I have  
 already made some  
 preliminary trials which  
 have proved very satisfac-  
 tory, and quite in accordance,  
 so far, with W. Edison's  
 measurements, written or  
 dictated. I am anxious to

make more complete and  
 more minutely accurate  
 measurements, both electric  
 and photometric, which  
 will be carried out by  
 my nephew and chief  
 assistant W. J. T. Bottomley.  
 They will probably occupy  
 several weeks, and I shall  
 send a statement of the  
 results when I have them  
 to W. Edison.

Should you be ever bring  
 you otherwise to Glasgow

as should you think it worth  
while to come or respond,  
I shall be most happy to  
show you all that we  
are doing - and I should  
be very glad to have the  
opportunity of learning from  
you results of your own  
experience.

Believe me yours truly,

William Thomson



London 28 May '87

My dear Sir; I went to exhibition of  
Maxim light last night, "Albany  
Works, Ruston Road, ~~near~~ A total of 65  
to 70 lamps, on brackets, candelabra,  
chandeliers and drops, run by engine  
20 horse power, nominal, that will work  
up to 60. The show is part of what is  
going to Paris Exposition, more is on  
the way. There was a large turnout  
of the Press, a full dinner spread  
with plenty of wine. Admission by  
card. I was admitted on my private  
card as a traveller curious to see the  
light, and was immediately taken up  
by one after the other of each of the  
three persons running the show  
desirous to know if I was a  
"member of the press." It is a very  
"gassy" party, when I went in lights  
were burning about 8 candle power,  
they informed me they were then

running at 25 candles, & could be  
run up to 800 without "putting," and  
that the average life of each was 4 to  
6 minutes, later on they were run up  
higher, I should say something more  
brilliant than the average gas  
lights. — I enclose you copy of the  
note handed me outside as a  
member of the press, to write up  
the article for my journal form.  
which had been prepared in  
advance of the show. —

Yours very truly

Edison & Bailey

18 Nov 1886

London, E. S.

Yours,

Edison & Bailey

DREXEL MORGAN & CO.  
Wall St Corner Broad.  
New York.  
DREXEL & CO.  
Philadelphia.  
DREXEL, HARRIS & CO.  
Paris.

New York May 28 1881

W. A. Edison Esq  
65 Fifth Ave

My dear Sir,  
In reply to our cable of last  
evening to Mr Gouraud, worded  
as follows:

Edison consents, though disapproving  
suggestion showing few lamps. No  
objection advertise in Edison's  
name readiness negotiate  
introduction light. Plan well  
under weigh.

we have received the following:  
Strongly advise but unwilling  
Edison disapproving

Be good enough to let us know  
your wishes in the matter so that  
we can cable Mr Gouraud today.

~~Yours~~  
Yours very truly  
Drexel Morgan & Co

*John*  
DREXEL MORGAN & CO.  
Wall St. Corcoran Bldg.  
New York  
DREXEL & CO.  
Philadelphia  
DREXEL, HARRIS & CO.  
London

New York June 13<sup>th</sup> 1881

J. A. Edison Esq  
65 Fifth Avenue

Dear Sir,

We received the following cable  
from Charles E. Lowland, London on  
Saturday afternoon late:

- Arranged Exclusive use to Lombard
- At Exhibition with Otto Engine - Queens
- Victoria St. House of Commons lights
- Swanwick. Readers Company announces
- Purchase Maxim. Harry Johnson.

+ this morning we received:-

- Thomson advises Otto Engine
- Lombard Exhibition but wants
- Edison's advice best dynamo
- available here.

You probably know  
that Mr. G's offices are  
in Park Building - D. M. C.

Yours very truly,  
D. M. C.

6, Lombard Street, E.C.  
London, June 15<sup>th</sup> 1881

Thomas A. Edison Esq.,  
65 7th Ave,  
New York City.

My dear Edison

I take for granted that you  
see all my correspondence with Dreple and  
Johnson, - cable and otherwise, - hence will  
not repeat. If this is not the case please  
inform me and I will send you copies  
of all communications with Dreple. Especially  
see my letter to them of this date. Greece  
manifests great interest in your light, and I  
understand gives it precedence over all  
others, and is likely to prove a strong ally.  
It is highly desirable to cultivate this new  
so bury an old hatchet. Sir Wm Thomson  
advocates this feeling and I shall act upon it  
unless you advise me to the contrary which  
I sincerely trust you will not. Sir William  
suggested his advising with me as to putting  
up the preliminary lumps in Lombard St  
and Greece was much delighted and proposed to  
go into it with great earnestness. The very  
day that Johnson's cable came and  
before he knew anything about it

it he came to advise me that there would be too much risk attending any introduction that did not contemplate Evans & Hale's system from the engine up and under the supervision of someone of his own people, thoroughly acquainted with it. Meanwhile he tells me that he has in the Post-office all the different kinds of lamps including Swan's and Maxim's, and that he would like a couple of yours - and for which I have promised to ask you, not feeling myself at liberty to do so <sup>without your approval</sup>. Meanwhile all the lamps received from the William Thomson I have had sealed up.



*And*  
 G. GRAHAM, TELEGRAPH ENGINEERS & CONTRACTORS,  
 PROPRIETORS OF  
 THE GLASGOW MEDICAL TELEPHONIC EXCHANGE,  
 THE GLASGOW LEGAL TELEPHONIC EXCHANGE,  
 THE GLASGOW COMMERCIAL TELEPHONIC EXCHANGE,  
 THE GLASGOW STOCK BROKERS' TELEPHONIC EXCHANGE.

*Private*

Sanchiehall Street,  
 AND 134 TO 140 DOUGLAS STREET,

Glasgow, 25<sup>th</sup> June 1881

David Graham

Thomas Alva Edison Esq,  
 Menlo Park  
 New York

Dear Sir,

I take this opportunity  
 of writing you with  
 reference to your recent  
 descent lamp. As you  
 will see from the journals  
 (The Telegraphic Journal  
 1<sup>st</sup> Apr 1881 p. 125

No. 1<sup>st</sup> June 1881 pages 210 & 214  
 The Gas Engineer, 1<sup>st</sup> Apr 1881  
 p. 201)

I send you by this post,  
 that we have been represent-  
 ing Mr. Swan of Newcastle  
 England, but I find that  
 his Company are so very slow  
 in making any definite  
 arrangements that I have  
 decided not to trouble myself  
 with them. Sir William  
 Thomson has shown me your  
 lamp & from the tests he has  
 made & appeared of it  
 I am of opinion that it is  
 of more practical use  
 than Swan's & I do not hesitate  
 to state that we could do  
 as well if not better with  
 yours. Having Sir William  
 Thomson with us & Andrew  
 Lamieson C. E. Principal  
 of The College of Science &  
 Arts here as our



Consulting electrician  
for our Lighting Depart.  
ment, besides having  
all the facilities for ex-  
ecuting any amount of  
work that may come  
into our hands, we  
have prepared ourselves  
to take up the whole of  
Scotland & Ireland.

Should you see your  
way to grant us a sole  
Agency for these two places  
we feel confident that it  
would prove to be as much  
to your advantage as ours.

If however you have  
any <sup>other</sup> proposal to make, —  
such as raising a large  
Company to work your

Camp say for Scotland &  
Ireland, we are also in  
a position to do this should  
you propose it. If entered  
we would effect the sole  
Agency in the interim  
to bring forward your Camp  
which would put the  
Company proposed in a  
better position when about  
to be formed.

I shall be glad to have  
a reply from you at your  
earliest convenience as  
we wish to strike out at  
once.

I am  
Yours faithfully  
David Crahan

CABLE ADDRESS  
"GUTHRIE, LONDON"

6, Lombard Street, E.C. 4.  
London July 19<sup>th</sup> 1887

J. Aldison Esq  
65, Fifth Avenue,  
New York City.

Dear Sir,

I have your letter of the 5<sup>th</sup> inst  
regarding Greese, microphone, and electric lamps  
and in the exercise of my discretion shall  
take an early opportunity of showing the letter  
to Mr Greese, as I think it would do a great  
deal of good. Meanwhile I have given him  
two of your lamps, and he seems to be very  
highly pleased with them. It looks as though  
he were going to be a useful card to us.

Yours truly,

W. H. Green

*Dread, Morgan & Co.*

P.O. Box 3036.

*New York* *Sept 12* *1897*

*J. A. Edgem Say*  
*Deph*

*How about the*  
*London Engine - Mr*  
*Tabb's cable today*  
*to know when it will*  
*oil -*

*Comre*  
*J. Wood Wright*

Wheeler, Morgan & Co

P.O. Box 2036.

New York Sept 20 1881

J. A. Edson Esq  
Dear Sir

In the outfit going  
to London I saw no thing  
mentioned in regard to a  
small plant going - I mean  
such as you wished me  
to call Mr. Fabbri you  
were ready to provide  
now - I should not on be  
sent out by first steamer  
I think this was the view  
of Mr. Fabbri at the time  
he left it as it can be put  
up on a steamer then  
the long one will be ready

do you not think it ought  
to go - I am sure Mr  
Fabbri for his views  
if you wish -

Yours  
J. H. Morgan

Paris Sept 20/87  
Friend Edwin

I recd. your letter of the  
29<sup>th</sup> ult. and forwarded it imme-  
diately to London with recommend-  
ation that your suggestions be acted  
upon - I had a call from  
The manager of the Crystal Palace  
at Sydenham near London - He  
said that they had decided to open  
an Exhibition the same as is now  
going on at the Palais de l'Industrie  
immediately after this closes and  
to last from December to March -  
I told him I would notify you  
at once and send you the enclosed  
papers which will give you all  
the necessary information about  
the Scheme - Major Page assured  
me that he would do everything  
to satisfy you as regards quantity  
of space and locality & hoped  
you would give him a favorable reply  
as had been the case with all  
the other parties whom he had

approached on the subject here.

By the time this reaches you  
the question of the proposed Syn-  
-dicate to buy and to something  
for the European Co will have  
been disposed of. - Personally &  
for D.M. Co I have declined taking  
any interest in the proposed business  
beyond what will come to us through  
R.D. & Co as their partners - and all  
I care for is to see the European Co  
properly represented here and its in-  
-terests protected more efficiently  
than they are at present & with  
nobody with full and special  
authority to do so. - Anybody that  
can do better than I think I can  
succeed in doing is welcome to the  
business. - Mr. Butcher, <sup>representing</sup> D.M. Co  
traces and I had a talk with some-  
body from the English Admiralty  
about buying one of their ironclads.

1844

My dear Sir

I have the honor to acknowledge the receipt of your letter of the 10th inst.

I am, Sir, very respectfully,

Your obedient servant,

J. H. [illegible]

I have arranged to call on them in London as soon as Mr. Johnson arrives and make the necessary arrangements - We got some very interesting bits of information from them regarding the Syrian lamp with which they have been experimenting on the "Invincible" for 3 weeks - Among other things they told us that the glass of the lamp was so frail as to crack to atoms if hard pressed in the palm of the hand! - Butcher & Co surprised them considerably by blowing <sup>some 100</sup> of them about the floor like a rubber ball & finally breaking it only on the front hind glass on the floor - All this and the expert show you make of your genius and ingenuity is undoubtedly very gratifying, but as I have already written to Mr. Wright & Major Latou you are surrounded by pirates and unless

negotiated measures are taken by the  
Government with you to push the  
inventions as a business, the  
money you will get out of them  
will not be worth looking after.

I shall feel obliged if you  
will let Mr. Wright read this  
letter as I have not time to write  
him by this post -

With best wishes I am

Yours truly, J. G. Gormi

E. P. Mott

Thos. A. Edison Esq.

New York.

The Admiralty are talking of letting  
Marconi test up the "agony" and  
give us the "ajix" - No lack of cheek  
as you see on the U. S. Co's side & this friend.



C. Lombard Street, E.C.

London, Oct 12<sup>th</sup> 1881

Mr. A. Edison, Esq.  
15 Fifth Avenue,  
New York.

Dear Sir, with regards to your  
telegram asking whether the  
Western Archlight is used in any  
form in London, I am taking the  
necessary steps to obtain this  
information,

Yours truly,

J. Edwards  
Jf.

C. Lombard Street, E.C.

London, Oct. 6<sup>th</sup> 1881

Dear Edison,

It is proposed to hold an Electrical  
Exhibition at the Crystal Palace here after  
the Paris one is over, the President of  
which is the Duke of Cornwall.

The Chairman of the Crystal Palace  
Company has requested me to ask you if  
you will be good enough to say if  
you will participate in it, and if so,  
please just cable the word "~~Paris~~" which  
I shall take as your approval, to exhibit  
here all that has been in Paris. Fri-  
Johnson and I will make the arrange-  
ments and believe that you ought to  
remove the plant from Paris as it might  
interfere with the French Patent laws  
should you keep it there longer than  
the Exhibition.

Yours very sincerely

J. Edwards

6, Lombard Street, E.C.  
London, Oct. 7<sup>th</sup> 1881.

J. A. Edison Esq.  
65 Fifth Avenue  
New-York

Sir,

Warton Arc-Light.

I am requested by Col. Poiraud to enclose  
the letter I received from the Secretary of the  
Electric Light and Power Corporation Company  
regarding the above light.

I am, Sir,

Your obedient servant  
R. H. Brown

enclosure

[ENCLOSURE]

The Electric Light & Power Generator Company, Limited,

29, Bankside,

London, S.E. October 4, 1881-

R. H. Krause, Esq.  
2, Stanley Terrace,  
Chesnut Road,  
Tottenham.

Dear Sir,

In reply to your enquiry, I beg  
to say that it is the Wealton Arc light  
which is in use in Queen Victoria Street &  
on Southwark Bridge. That and the Maxim  
Incandescent lamp both belong to us. I  
shall be happy to give you any information  
about either of them.

Yours faithfully,

J. H. Landon  
Secretary

DREXEL MORGAN & CO.  
Wall St. Corner Broad.  
New York  
DREXEL & CO.  
Philadelphia.  
DREXEL, HANES & CO.  
Paris.

New York Oct 17 1881

J. A. Edison Esqre  
Trenton

Dear Sir,

Will you kindly inform  
us at your very earliest opportunity,  
your ideas

1<sup>st</sup> as to whether or not you think  
a factory should be started in  
England, as soon as matters have  
advanced far enough for such a  
purpose

2<sup>nd</sup> about supplying machinery  
plants lamps &c for England - and  
the prices you would charge for  
each.

3<sup>rd</sup> In case it is desired, how rapidly  
you can furnish 3 dynamos and  
what proportion of your output  
you can spare for the English market

4<sup>th</sup> How soon you can send

one

one or more big dynamos like the  
one already sent to London  
as we have been informed that you  
propose to remove the whole Paris  
plant, and ship it to London, for  
the possible purpose of an Exhibition  
at the Crystal Palace, we shall be  
glad to hear from you at whose  
expense such Exhibition is to be  
made.

Yours very truly  
Alexander Graham Bell

Mr. Wm. H. Preece  
Telegraph Office  
London  
England  
Dear Sir  
I have the pleasure to acknowledge the receipt of your letter of the 10th inst. in relation to the proposed Exhibition at the Crystal Palace, and in reply to inform you that the same has been forwarded to the proper authorities for their consideration. I am, Sir, very respectfully,  
Yours truly,  
Alexander Graham Bell

1. m. 2. y. 3. v. 4. c. 5. e. 6. z.  
 7. d. 8. p. 9. l. 10. o. 11. n. 12. g. 13. x. 14. e. 15. e.  
 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.

Eng. Eight  
 Oct. 12. 81  
 Grove St.

English Eight  
 Oct. 12. 81  
 Grove St.

T. A. EDISON,  
65 Fifth Avenue.

Copy 1<sup>st</sup> & 2<sup>nd</sup> Pers.

New York, 18<sup>th</sup> Oct. 1881

Messrs Duval Morgan & Co  
3 Broad Street  
Ldng

Dear Sirs

I have your favor of 17<sup>th</sup> and in  
reply beg to state

1<sup>st</sup> I think that ultimately we shall have to  
establish a factory in England but for the present  
as from stations the machinery can be shipped  
from here at lower cost and much better made  
than were we to start a factory in England to do  
the work right away

2<sup>nd</sup> We will supply the lamps for the Isolated  
Business ("3" dynamos) at fifty cents each, when  
a station is started. I will supply them at forty  
cents each for the purpose of lighting up a district.  
I am certain it would not pay for a long time  
to come to start a lamp factory in England  
as freights being low and there being no duties  
it would be impossible to compete with our  
Lamp factory here as we have established such a  
perfect system of manufacture and business now whereas

I have been thinking of you very much lately  
 and wondering how you are getting on.  
 I hope you are well and happy.  
 I have been very busy lately  
 but I have managed to find some time  
 to write you a few lines.  
 I have been thinking of you very much lately  
 and wondering how you are getting on.  
 I hope you are well and happy.  
 I have been very busy lately  
 but I have managed to find some time  
 to write you a few lines.  
 I have been thinking of you very much lately  
 and wondering how you are getting on.  
 I hope you are well and happy.  
 I have been very busy lately  
 but I have managed to find some time  
 to write you a few lines.

Your friend  
 J. P. [Name]

3. [Name]  
 [Name]  
 [Name]

16. [Name]

1st A 7 1/2 Cms



[FROM SAMUEL INSULL]

*High Lingon*  
*12.8.1885*  
*Copy 4 pages*  
*most valuable*  
*Col. Gouraud*  
*Oct 18*  
Oct. 18th,

Dear Sir:--

Referring to your letter of the 6th, Mr. Fabbri has already communicated with Mr. Edison as to the Exhibition at the Crystal Palace. Mr. Edison has written in reply to Mr. Johnson on the subject with <sup>request</sup> requires to consult Mr. Fabbri as to the matter.

Mr. Edison has not the slightest intention of keeping the exhibits in Paris after the close of the Exhibition there, he being fully alive to the necessity of removing them considering the present state of the French Patent Law.

Yours truly,

London Eng. Oct. 24/88  
Mess. Edison Eaton and  
Wright — Gentlemen

Having allowed so many days to  
pass ere communicating with  
any of you I am now compelled  
to address you collectively —

It is just one month since I left  
New York and yet I have not  
so much as secured a location  
for operations. Nevertheless some  
work has been done — some progress  
made which I shall endeavor to  
herein outline to the end that you  
may know the situation:

On arrival: I found Mr. Fabbri  
and Col. Gouraud patiently  
waiting for me to come with the  
precise information as to our  
requirements in the matter of  
space & character of premises  
~~required~~ — they had industriously  
canvassed the subject & the  
town to fix upon a proper  
location — but with ill success  
Nevertheless certain sites and  
propositions were in hand  
for my more particular  
inspection — The three of us then

2<sup>nd</sup> re. covered the ground & gradually discovered obstacles of one kind or another to them all - This continued in respect to new sites until we were driven to the consideration of the question of abandoning the West End or Charing Cross - and going to the City. Curiously enough this idea occurred to us simultaneously & without previous <sup>serious</sup> discussion and alike remarkably we all reached the same conclusion in the same night & each came to the other the next morning with an important air of happy conceit that he had solved the difficulty - suffice it - that we found ourselves "great minds" alike - and concluded - as you must - that after all the City was the true and only proper place to set up our shop - Considering the Character of our wares - and the habits of our particular customers - In the City they live and breathe (foul gas polluted air) in the day time - made artificially night time by the London Fog - and at nights the scattered to the four corners of the great Metropolis; In point of fact the very men to whom we wished to

3 Show the thing never went  
Either to Piccadilly or Charing X  
- While they did go daily to the  
City - and moreover there suffered  
the only inconvenience of Gas - for  
in their Homes they dwell in  
the "Light of Other Days": all this  
wisdom was fully Endorsed by  
Our friends - and then we saw  
the Explanation of the fact that  
all native Electric Light Exploitation  
is confined to a radius of 1/2  
mile of the Mansion House -

A vigorous search was then commenced  
and maintained - Clerks - Real Estate  
Agents, Architects Etc - being enlisted -  
for a suitable Establishment within  
1/2 mile of the Lord Mayors abode -  
This soon developed a new barrier  
viz: insufficient space within given  
walls - and also an equally formidable  
One of prejudice against Machinery  
on account of noise - The necessity  
for erecting a Chimney shaft was  
- There are no shafts of sufficient  
Calibre in the City - and the Author-  
ities only permit the erection of  
"Specification shafts" = Enough that  
we soon found ourselves confined  
to a single building viz: The  
Mansion House Chambers Queen  
Victoria St. but here we were  
on very narrow margins  
all around - It was problematical

4 Whether we could get the requisite permit to erect a shaft on the only available bit of ground contiguous to the premises. It was uncertain whether our Engineer & Boiler Contractor at all times he maintained in such peaceful quietude as to guarantee that none of the 2 or 300 tenants should ever be able to fancy themselves "annoyed" by the noise - and again it was not possible to determine whether the space between the foundation walls was sufficient - my personal knowledge of what was requisite was confined to 10 or 12 feet & inches obtained from Paris by letter & telegraph. These feet & inches were just there & no more - Consideration of convenience & possibly of occasional necessities could not be definitely passed upon except by an inspection either by one acquainted with the premises of the Boiler - or vice versa. and as Littell could not leave Paris where he was busily engaged in installing Batchelor's Big Dynamo the other alternative was accepted and I went to Paris to see the Boiler - and for other & various reasons which will appear anon - Intending to remain two days - I remained 8 days

5 During which time Mr Frabbe's  
sat in sack cloth & ashes in London  
and mourned for my return =  
In Paris I met Pratt of Babcock  
& Wilcox and sent him over to  
inspect the premises and report to  
Mr Frabbe. On my return I learned  
that after careful <sup>measurements</sup> consideration  
they had been found inadequate  
and unavailable - a new search  
then began within a wider radius  
and Queen Victoria St. near the  
Times office seemed for a time  
to offer tempting inducements  
by reason of the Subway (Thames)  
running under it - thus furnishing  
ready to hand a trench for  
our wires to the City 1/2 mile on  
one hand - The Times across the  
St - The Royal Hotel 2 blocks, &  
numerous fine shops on either  
side - Certain empty buildings  
were found - and everything looked  
colour de rose - until Landlords  
were found to be absolutely stupid  
in the matter of considering our  
applications, they would listen  
to nothing - I was determined  
prosecution of the search for a  
mercenary - liberal - philanthropic  
or broad minded Landowner  
failed miserably - nothing  
but the Omnipotent Corporation

Of British Stupidity loomed on our  
tired vision = Vacant lots were  
Explored - Dondlows beaught to rest  
them - Architects begged to erect thereon  
suitable Piles for Housing us  
but all to no avail - If individual  
obstreperousness was over come  
Corporate red tape stood like a  
Wall of adamant in our way =  
At this juncture Mr Gabbri swore  
(bonafides) - and left me to Frank  
in our alone = After drinking a  
Pint of bitter at the nearest Pub.  
I bethought me of friend MacDonald  
of the Pines = I called on him  
and was graciously received = stating  
my trials & tribulations and picturing  
the breadth of my aspirations in the  
matter of solving the great problem  
of the London fog = I obtained from  
him a Card of introduction to the  
"Engineer in Chief of the City Sewers  
Commission" = Guild Hall =

To this Mr & Mrs official I went  
& from him learned - under the  
rose - some things which made  
us all glad we had had such  
little success during the past fortnight  
- For had we succeeded in securing  
any of the sites looked at  
they would not have availed us  
in other respects than to have  
wasted for us much time & money

7. It seems that the Gas Companies have the exclusive right to "Open the streets" for private lighting & that no authority less than an Act of Parliament can confer that right to "scratch a cobbler's shoe". Even as an experiment - with private lighting in view - and further that the Gas companies are keeping a jealous eye on this public enemy to sit down upon his first attempt to burrow - For the purpose of lighting the streets the Metropolitan Board of Works can do what they please - Hence Goumens Gramme Jablohoff & Co. have fairly dug right & left - but to "distribute" Electricity for purposes of Commercial use are one & all relegated to either individual Cellars - or the House Top - Other valuable information was obtained and then - Entirely on the quiet - as a friend of Macdonalds - I was informed that the Holborn Viaduct was peculiarly adapted to our wants - inasmuch as under it ran two subways throughout its entire length - which subways carried the Gas & water supply for the Houses on the street & also for the Street Lamps and that there existed a Hole



8 4 inches square - between each  
& every horse on the viaduct - and  
the interior of the Subway - also  
an opening up into each lamp  
Post - - Also that this viaduct  
was extended by a branch down  
to Ludgate Circus (Fleet Street) - & that  
throughout this branch similar  
Convenience were provided -  
Thus you see with our station in  
a Building on the Viaduct we  
could run to the right 2 blocks  
& to the left 5 or 6 - light all  
the street lamps - a Handsome Ride  
and 4 Buildings called the Bridge  
Towers - Thus making a magnificent  
street display - and then <sup>as we show glass</sup> run  
into as many private shops ~~as we~~  
- two Railway Stations, two Hotels,  
a Church &c &c - & never dig  
out a brick or "scratch a Cobble"  
in point of fact never come to  
the surface at all - thus saving in  
Labor and Time - saving the necessity  
for applying to the City or Parliament  
for rights sure to be disputed -  
Saving in the risk of having the  
Pipe laying work badly done &c  
and securing every foot of our  
street system <sup>as well</sup> to inspection as  
any other part of our show

9- beside all this - the Halboorn  
is Essentially an american Street  
- lots of Am<sup>n</sup> Houses on it -  
And further - it is a viaduct - The  
ground floor of the buildings on  
the Viaduct is the 2<sup>nd</sup> Floor - from  
the street below - The Cellar of the  
building being the ground floor of  
the bottom street - Thus a wagon  
may drive into the Cellar & deposit  
our machinery & coal - and the 1<sup>st</sup>  
floor up - being the "Basement" of  
the Viaduct - may be used for our  
Regulation - Measuring devices - &  
all the testing Paraphernalia  
- in short as a testing floor for  
scientific visitors & inspectors  
- The 2<sup>nd</sup> Floor up - (The Ground floor  
of the Viaduct) can be used as a  
display room - for Every detail of  
the light - and the floors above  
for offices - repair shops &c -  
Could any thing be more lovely?  
- I shall tell you how the Street  
stands in respect to Contiguity to  
the Commercial Centro - traffic &c -  
I am advised to make my Application  
to the City Engineers Commission  
for permission to put my wires  
temporarily in this Viaduct  
for the purpose of lighting the  
street Lamps - Towers & Bridges

10 And I make no mention of  
Any intention to do anything  
Else. My friend is the man before  
Whom the application will come  
for report = and I am satisfied  
it will be OK. = Now as to the  
Building = No 57 = Midway of the  
Viaduct (Russell - next door to Bush the  
Tool man - & Ward. - the am<sup>2</sup>) - "Simply  
& we have had 3 days with the  
"Holborn Viaduct Land association"  
On it = I talked largely to the "Board"  
for 2 hours one day - net result  
- a practically closed bargain insofar  
as general understanding & terms  
are concerned (Had to pay heavy of course)  
- but a "reference" has to be made  
to the architect - since the proposed  
Construction of a shaft 6 feet square  
and 90 feet high right up from  
the ground to the air above - within  
the walls of the building & consequently  
through the various floors - renders  
the final questions over for  
his Consideration = Our architect  
says no trouble at all in doing  
the work - And Mr. Fabbie having  
found incidentally that our  
Architect's superior is no less  
a person than John Wischard  
an old friend of 30 years standing  
has put him on to the brother  
architect to frog him in

"Our interest & reader over  
Case sure - This is Saturday  
night - Tuesday morning the Committee  
Meets - & the architects report  
being satisfactory we take possession  
and begin live work = I have  
thus gone into details to give you  
some idea how time may be  
used up in this benighted Quint  
without producing tangible results =  
Little is now with me - ready for  
an active Campaign - The Green  
arrived today consequently my machine  
is at the Door -

The day this is at Queenstown tomorrow  
therefore my aids Hammer Hood &  
Halloway - (3 H4. to supply them my  
English assistants will lack I suppose  
will be on hand just at the  
right time =

So much for this branch of the  
Colossal job in hand = now for  
the collateral branches - As they  
were practically began in Paris  
I may as well treat of my visit  
there first - you will then better  
understand any references which  
may occur to the various other  
Electric Light interests - they will  
be numerous & aggravating so let  
us commence on the filtration  
and on the Suppressions I received  
in the great Parisienne Buxton  
shop of Electricity = My two Candles  
having burned out - The next chapter must lay out  
on the light

## 12 Paris Electrical Exhibition

I was disappointed in this show in many ways - magnificent as it truly is - 1<sup>st</sup> instead of finding the M<sup>r</sup>. Elec. Lit. Co. lighting the whole City of Paris as well as the Exhibition I found them doing so little and of so little consequence generally that it was difficult to find them at all - The Graphic description of their show is simply pure unadulterated trash - they have a big light on top the Building which by means of a reflector they throw on the Obelisk in one direction and on the arc de triumphe in the other - It serves to attract the attention of all who pass up & down the Champs Elysees but makes no impression other than these old house lights did which the Variety shows used to display on Broadway - Beside they show perhaps 100 lamps in all - burning - when they do burn - at a very high degree of Incandescence - The grand Chaudiere in the Saloon of Honor is a myth - They have a Co. Horse Engine very fine - but it gets its steam from a Steam Pipe

13 used in common by several  
Other Engines and as it requires a  
much higher pressure than does  
the others it frequently happens  
that they have to stop it - or run  
it so slow that their exhibit  
suffers - Altogether they fail to  
convey the idea of effectiveness or  
reliability - but do give the idea  
of brilliancy - they are represented  
in force - and Hyde & Co gave a  
big dinner while I was in Paris  
to which Prof Barker was ashamed  
to go - and <sup>from which</sup> others who did go <sup>shamefully</sup>  
retired - It did them no good  
in any way - they have however  
in other ways pulled their wires  
so as to obtain gold medals - a  
not difficult task in the way such  
honours were conferred - they  
succeeded as did Drouin in getting  
into the Opera House - but only  
for a limited time - a few nights  
and only in a small way - 2 small  
rooms at the end of two corridors  
but trifling as was this work - they  
were as unready as were we on the  
opening night - still they did what  
Batchelor wouldn't do viz: put on  
their current Era they had enough  
- result, as her Prince - they were  
simply a laughing stock - the lights  
were only a dull red - this is  
confirmed by others - nevertheless  
I expect to hear that they have

It had glowing descriptions of this night work Cabled to the New York Papers - The House is more than half lit by arc lights of various kinds - partly by Gas & partly by Arcandescence - I had to leave before the latter was ready but shall see it next Sunday in full blast & will report the good facts - Batchelor got his machines on Thursday - but it was not in the wood to get them up by Saturday - although he worked all night - Subsequently I am informed the House was opened for an inspection of the E. Lighting but even then no one was ready except this tiny Maxim - who had his few lamps all right - Batch had 3 Chandeliers - Swan had a part of his One Chandeliers (The Grand one in the Auditorium) The whole thing was however so incomplete that the Directors would not turn out the Gas - Consequently the two were shown together - this is my last information from there - Swan - Swan is by far the best represented of any of the Illumin - descent people - and makes a very fair show - He lights the Congress Room - a restaurant - The British Post office & John the British Commission offices and the House Battery section

15- His Lamps are kept at about the same as ours - but look brighter because of their little condensed turn in the Carbon giving out rays - objectionable of course in actual practice - but serving him a good turn in this display - He has one immense Chandeliers of thin Brass Tubing threaded out very greatly & carrying perhaps 60 or 70 lights - It attracts much attention - but after a time is unfavorably criticized as hard on the eyes - A large and powerful English influence protests him & fathers his interests in the Exhibition. He also gets a gold medal.

George Love Fox

Fathered by the British Electric Light & Power generating Co. (Pender & Co) makes a small but very effective display - His Lamps are very even & stand at a very high incandescence - probably 50 or 60 Candles - He makes his Carbons of Brown Corn - thick but evidently good - Must however be very low resistance. This Co. also gets a gold medal - & naturally will credit it to their Incandescent Lamp - since it is the one vital thing of the day - now conceded by all - (a year ago I was laughed out of England for its Eulogy) -

Edison Unfortunately for Batchelor he has had to do with but 2 Dynamos.



16 Hence could show but 120  $\frac{1}{2}$   
lights and 60 full ones - Moses  
rendered matters worse by leaving  
the two large rooms with dark  
red tapestry - you will readily see  
that this was insufficient to effect  
a brilliant lighting of these rooms  
even in a general way - not to  
speak of supplying him with a  
surplus of current with which to  
display the multitude of things  
with which he was provided &  
which mark the line of difference  
between Edison & others - these  
things therefore lay scattered about  
bearing only mute testimony of their  
inventor - instead of occupying  
the first place as they should -  
- for given a doubt as to who  
is the Father of Incandescence  
- it becomes of importance in a  
place like that to show who is  
best training the child - this has  
not been done at Paris except as  
it might be by personal exhibition  
&c = the Big Dynamo was in  
place & ready to steam last Friday  
a week - but the Opera House  
has so occupied itself - that it is  
not as yet - ready to do any lighting  
= the men were running the wires  
& putting up the 3 or 400 lamps to  
light the Grand Escalier with it -  
When I left - and my information  
is that it will run today - I hope

17- it will as to doing so - is Essential  
to our receiving our full meed  
of reward - beside it may assist  
our friends in doing a grand  
Coup - viz: Naming the authorities  
Vote a Grand Prize - a singular  
Honour - which shall lift the steelfirst  
above any <sup>any</sup> & all others - This would  
probably <sup>have</sup> been done long ago - but  
for the fact that it is so self  
Evident that it would go to Edison  
that all other interested parties  
Oppose it - If however the Big Machine  
would do its Duty & it is too  
late - it is the opinion of many  
that enough impartial votes  
could be found to award it in  
the full knowledge that Edison would  
get it. Barker has worked hard  
& honestly for this -  
I have seen enough of this Paris  
Exhibit to wish for the opportunity  
to do it over - That opportunity is  
happily at hand and my word for  
it - if you will hear of something  
different from this French Show -  
In the 1st place I will have everything  
on the spot - where Bataclan had  
nothing - In the second place I  
will have the English Tongue (the  
only good thing in an Englishman)  
to deal with - & Golly I flatter myself  
I know how to run a Show  
to display the vital qualities  
of my Cattle = all this has no

18 criticism of Batch in it = He  
has done with what he had to do  
with all that was possible -  
I only mean to point this fact that  
it is fortunate that the thing is  
to be repeated here - when all are  
in the same state of readiness  
to meet the job - that our competitors  
are - But more of the English show  
anon = With Mr Lowrey to guide  
me I soon found the lay of the  
English men - for one Thomson had  
gone home - Prof Crocker & W. A. Preece  
were the bosses of the English  
Wire Mill - & neither of them had  
Even so much as looked at the  
Edison Outfit - in fact I found  
a decided disposition existed  
among Englishmen to stand aloof  
& not see anything Edisonian  
this Mr Lowrey asked me to help him  
correct - and this is what kept  
me in Paris 8 Days instead of 3.  
Mr Fabre had already authorized Mr  
Lowrey to "interview" Prof Barker &  
he had done it - Indeed I found the  
Prof working like a Beaver - in  
fact I saw him in the Edison feet  
pretty near every time I went in  
- He gave me the above facts about  
the English - & gave me some hints  
how to get hold of Crocker -  
I finally got him for a couple  
of hours - & gave him such a  
tongue thrashing of the subject

19 that he afterwards told Mr  
Lowrey he was a convert to  
many things Edisonian that he  
did not previously believe in -  
Beside all of which Lowrey found  
out that he & Swan were not on  
a friendly footing - & that he  
Crooker - was free to ask & would  
like to ask with us - He was  
told he could - I then brought out  
Preece - & after a 3 hours session  
at breakfast convinced him that  
his interests were with us - He  
was very frank & cordial & said  
that if on investigation he found  
the Edison system promised the  
most in the matter of solving the  
question he wanted to be identified  
with it - I told him we wanted  
him - and that if he would take the  
trouble to go over the Edison Exhibit  
with me I would guarantee to  
convince him that Swan or any  
one else was simply nowhere in  
comparison - He appointed a day  
I waited for him - put him through  
and got him to say he was  
entirely satisfied - & was ready to  
join us - He told me he was quite  
free to ask - & it would now simply  
be a matter of business - He  
then enlarged upon his influence  
etc etc & also upon the effect

To His Open alliance with Edison  
would have in allaying the  
Old feeling & restoring Edison  
to favor again among scientific  
men & others that it would  
be said that since Morse has  
gone into it - the Edison system  
must be the best &c &c. To all of  
which I assented - & then introduced  
him to Mr Lowrey - Result - He  
Lowrey & Mr Dabbie are to meet in  
London this week to definitely  
ratify the bargain - Then Wm Green  
& E. Johnson are to begin the work  
of reducing the works of the Electric  
to the level of Common Memory.  
Mr Dabbie has made diligent  
inquiry in London & is assured  
on all hands that P. is by far  
a more desirable man than even  
Mr Wm Thomson - by reason of his  
position - His Energy - and his  
ambition - In point of fact it has  
developed that no man in England  
is in a position to do us so much  
practical good - He has told me  
that if he & I pull together in  
this matter we will command  
an army of enthusiastic supporters  
and from my knowledge of what  
he was able to do in the telephone  
case I am quite prepared to  
believe it - At all Events I am  
quite happy over it - I have

21/ Promised him the glory of  
a grand exhibit & lecture before  
the Royal Institution - and that  
I will undertake to make the finest  
scientific exhibit that was ever  
made on a lecture platform  
This warmed him as good wine  
& we parted mutually satisfied  
with each other - as soon as the  
Paris Exhibit closes - I shall enlist  
his services in ferreting out what  
Swan & others have done that will  
affect our Patent & thus prepare  
for our disclaimers -  
Preece tells me that enough can be  
shown by Swan to make it desirable  
at least to first listen to - & if  
possible accept his claims overtones  
- Others advise a like course - &  
Mr Lowrey has had more than one  
interview with Grahamself - but  
Swan has parted with the control  
of his things to Newcastle men  
- & a Board has to be dealt with  
- Further communications between  
them & Mr Babbie & Lowrey are to be  
had in London - We all agree however  
that our present part is only to  
listen - Ere we have anything to  
say - we must have our Patent  
reported upon - That takes time  
Meantime Everywhere we are  
cautioned against openly assailing

2<sup>nd</sup> Swan - On two grounds -

1<sup>st</sup> That he certainly did something  
with Carbon in vacuo - before  
the date of our Patent =

2<sup>nd</sup> That he is a man of so much  
influence in Scientific circles  
that to assail him will react on  
us severely -

Pease said to me = If you could  
arrange with Swan you could  
sweep the field = My answer  
staggered him a little - I said =  
If Swan made this Lamp before  
Edison & showed it = To arrange  
with him would not help us  
as others could easily prove he  
showed it - then Lane Fox, Maxim  
or any other man could take his  
place position against us =  
He then said that if Swan did show  
it - he probably did so only to one or  
two personal friends - Oh very well  
then says I - In that case our  
Patent is good as against him =  
In point of fact as far as I  
can make out Swan at this  
early day - I take it to be about  
this = He had his old notions  
about vacuum descent rendered  
by the news from American  
& while Edison was working  
on Platinum - he was trying  
Carbon - but he clung to the old

23  
False theory of low resistance  
and consequently accomplished  
nothing until Edison made Public  
his Carbon discoveries - Then  
Swan probably saw his Error &  
immediately commenced to cover  
it up and apply his old devices  
to the new order of things - Just how  
far a clear & causal investigation  
will show him to have succeeded  
or is folly to try & guess - This is  
an investigation we have got to  
make ere we go into Court with  
our Patent. For if he should be  
able to upset us on one of the  
3 essential points of the Lamp  
or were better to first discard it  
& load the Lamp by virtue of the  
other two = But it is too Early to  
discuss this branch intelligently  
so I'll drop it = My present object  
is simply to show that Swan is  
believed in here - & we must go  
for him as you would for a  
Bull Dog - with a clear eye  
& steady hand =

Now for the other people - they  
are simply traversing the old  
Microphone ground - "If it  
is Public property as Swan tells  
us then we will use it" =

We shall see = In the event Bye  
& Bye —

While on this Branch I may mention



24 That Mr Gabbai and I are not  
yet fully decided on our policies  
There are so many things to consider  
in selecting them - but tomorrow  
we shall probably elect to take one  
of two firms at present under  
advisement =  
There are four powerful Companies  
in the field now - The Swan - The  
Siemens - The Brush and the  
British - All will use arc &  
Incandescent Lights = Swan  
& Siemens exchanging - Brush has  
the Lane Fox & the British the  
Maxim - at least that is the  
present report. The British showed  
the Lane Fox at Paris - but I  
believe they broke - Maxim has I  
am told finally closed with them  
- There you see Incandescent fully  
recognized = & One year ago old  
England wouldn't have it = now  
~~they~~ she claims she invented it =  
Oh it's a glorious Country of  
honest Shopkeepers -  
Siemens Bros. are the most  
Active Electricians Manufacturers  
and Patent Thieves in Europe  
their works are so extensive &  
their Capital so heavy - that  
they can & do seize on to new  
Ideas with avidity & make a  
good display on every occasion  
their work at Paris from  
every point of view is far ahead

25 of any other European Concern.  
But this Railway is a huge joke  
- a 25 Horse Power Engine labors  
hard to generate enough Electricity  
to drive a 2 Horse Tramway Car  
"Gauze" Battery

These people are moving lively  
I enclose one of their Circulars  
I have promised them some of  
our lamps to test - I had a long  
interview with their Chief man  
here. & objected to the form of his  
tabulation of results and went  
into the fact that while these  
other people only made lamps  
for show you had to consider  
Distribution Economy &c. &c. He  
seemed to grasp the situation  
pretty fairly - and is exceedingly  
Anxious to do business with us  
they want us to sell them lamps  
of various powers - in large quantities.  
Mr. Gabbi & I concluded that  
was a matter for the lamp factory  
to consider - I consequently enclose  
a letter from them asking for  
terms on various lamps & <sup>specimens</sup>  
Let us have a reply of some sort  
we have promised. It =  
we have also referred them to  
you in a matter respecting the  
use of their Batteries on Railways  
in the U.S. You will hear from  
them - They tried to talk me  
into the notion that it would be

26 Economy for us to use them  
in our general system - a  
savings of Investment in Plant &  
re- But I couldn't see it - since  
they confessedly lose 10% in charging  
& 40% in discharging them - This  
With the Cost of the Batteries would  
more than offset the savings of  
Engine & Dynamo Plant - While the  
Coal Question would remain the  
same - Their Idea is to locate the  
reservoirs in out of the way & cheap  
places & fill them by means of  
a large & economical Engine  
working the full 24 Hours - at first  
sight it has its attractions, but  
it won't hold water - However  
it is a good thing for other purposes  
than our general system & since  
Edison's Patents in the U.S. prevent  
them from using it - Doubtless you  
could make a good arrangement  
with them to control it - They have  
successfully lighted a Railway train  
& are about to apply it to all the  
Cars of the Brighton Railway  
Give me all your views on them  
and any other things contained  
in this which you may deem of  
importance, or necessary to state  
me on =

London Times -

I find they are using the Swan  
Lamps - hence the colour of  
the Paris articles - I shall take  
occasion to correct this error

27. of my old friend MacDonald  
as an Opposite Chance  
Occurs -

I wish you would give me the  
latest figures on your Big Dynamo  
its Economical Efficiency &c -

They are much wanted and I am  
not as clear on this as I should  
like to be - Let friend Clarke write  
me a few lines on the Subject.

fr Wm Thomson in a lecture at  
Yorks - which you have no doubt  
seen - Endorses your Dynamo  
& tells others they dont understand  
the machine - rather a back  
slap for Siemens & Co -

fr Wm - has lost caste - by his  
report on the Faure Battery - there  
are all sorts of stories going the  
rounds about him - P. gave me  
one - I wont put it down here

- I want to see the old gentleman  
first & have a talk with him

- then I'll send you some interesting  
Conclusions.

### Crystal Palace Exhibition

Mrs Babini Gairaud & others  
waited upon their friend Major  
Edmond Poff - the manager of the  
Crystal Palace - and selected a

space - second to none in the Building  
It will take about 500 or 600  
lights to properly light it - I shall  
do it with small Dynamos -

28 We have the Concert Room - a  
Court of Pleasure - a Restaurant  
& Bar - several Jim Crack Booths -  
The Grand Central Entrance through  
which the major portion of the visitors  
Enter and an Entertainment Court  
or room - in which there is a stage  
The Concert room will make a  
beautiful display - People gathered  
to sit & listen to the music - & will  
thus have leisure to examine the  
lights - & be away from the glare  
of the big lights - The Bar & Booths  
are to show a practical application  
And in the Entertainment Court  
I will have the system portrayed  
in a manner that will show it  
as a distinguishing mark of  
the Edison system from the work  
of others - This is what I do not  
think is properly brought out at  
Paris - The stage I will use for the  
Phonograph Telephones &c. at  
Paris the Phonograph though ~~un~~fully  
worked - filled the Edison room  
so that justice to more important  
things was impossible - This my  
plan will remedy - while still  
drawing people into the precincts  
of Edison's light Exhibit - The main  
entrance nave is very large & will  
take 250 lamps - but it is  
the point where entrance to the  
Exhibition is made - & enables me

29 to usher people into the  
presence of the Edison Lamps  
before they come in sight of the  
arc lights = At Paris we are  
up stairs - & people traverse a  
perfectly blinding sheet of light  
from hundreds of arc lights <sup>as</sup> they  
reach us - the effect is to  
make us look Red & very dim  
At the Crystal Palace we are  
all down stairs - occupy one  
entire cross section of the Building  
and will be very concentrated  
thus enabling me to economize  
in everything & to reap full benefit  
of all my Lamps -

This will cost us something &  
take up a good deal of time  
- but <sup>whether I do it or not</sup> ~~it~~ is not a question for us  
to consider - Everybody else will  
be there & we shall have to fall  
in line -

Engines send me price lists of  
Engines for from 1 to 10 dynamos  
Engines here are not as cheap as  
I supposed - In fact I believe you  
can deliver in London for  
less than we are asked - send  
on full particulars - Don't care  
for Boilers -

### 30 Selling Lamps -

This raises a question of policy & other questions to an extent that it cannot be hastily determined upon we are considering it - You are in error as to Owens price - He sells to Fane Bally people in certain quantities for 5 shillings in larger quantities for less - His Lamp is a cheap affair as regards the use here - I looked at them with Hammer last night at the Savoy Theatre (they do not by the way exceed 8 Candles there on an average) - and I am not aware that we could "squalish" him by the means you suggest - however it is a good idea & will not be lightly discarded.

### Isolated Business

To enter into this business vigorously means more "demoralization" for me than for you - I must organize for it - I can't send lamps ~~or~~ machines to Jones Brown & Co. as you would a Bale of Cotton - Even you don't do that - Don't therefore expect me to order lamps machines etc. etc. till until I have had time to "pull myself together" -

Your aid - The above applies ~~to~~ him with equal force - He expects me to show him what to do - & as he does it - in responding to you so promptly for 10 machines he simply went to the wall locked -

### 3. Retaining Experts

This is a delicate business & must be done under advice - my adviser will be W.K.C. - I am to have him & Mr. Rabbit together today for purpose of consummating arrangements made in Paris. I will then obtain a list of names of those whom it will be the part of wisdom to secure - and also their various valuations. The views of Engineer & Engineering you name shall be attended to - I have seen Coke in Paris - & he has promised to come & see me in London on business - I will then clinch my Paris conversation with him.

Paris Betty The Enclosure in re- to Railway matters is the proposition to which I refer & earlier in this - They have sent it to us - we have replied that it has been forwarded to you for consideration - you will please reply direct - advising us of your answer -

Latest from Paris - Hatch has 400 lamps on Big machine - W.K.C. told me. It was doing splendidly & producing a good effect - 1000

- London I am signing a lease for 57 Holborn Cir. Rd. - tomorrow we begin operations - my 4 men are now unloading the "boxes"

Faithfully Yours Edw. H. Johnson



# 446, STRAND, W.C.,

## FAURE'S ELECTRIC ACCUMULATOR.

### STORAGE OF FORCE. STORAGE OF ELECTRICITY.

By means of FAURE'S Accumulators Electric energy can be stored and retained to be re-distributed as and when required.

Sir William Thomson's experiments have demonstrated, beyond doubt, that not more than 10 % of the electric energy passing through the Accumulator is lost, and this loss is certainly less than the average leakage of Gas in its transmission through the pipes.

With Faure's Accumulator a steady divided light, of any intensity required, can be obtained in incandescent lamps, irrespective of their resistance. At the same time, Electric energy can be continually produced and stored, and thus a very great saving is effected, as by the aid of the Accumulator the Steam Engines and the Dynamo-Electric machines can run without cessation during the whole 24 hours of the day.

But where Faure's invention is of the greatest value, is in its capability of concentrating and transporting motive power, and in its use in the place of animal and mechanical force, so that at will, and at all times, the required amount of power can be had for purposes of traction, and working engines of every kind throughout a town, or for ploughing, thrashing, or other agricultural purposes in the country, or for propelling vessels, barges, and boats upon the water. In fact, once the motive power being carried about in an independent form, it can be utilised, for land and marine purposes, wherever there is a piece of mechanism to be set in motion.

Moreover it will permit of the use and application of the immense, and hitherto inefficient and almost wasted, forces of wind and water, for the inexpensive production of Electric energy.

All these immense forces of nature which, by reason of their uncertainty, or their distance, have either not been fully utilised, or have been entirely lost, will, by M. Faure's invention, become a certain means of producing the electricity, which can be stored and be drawn upon as required for any of the above purposes. Consequently the storage of Electric energy must, of itself, create an economic revolution, and as it can only be accomplished, practically and advantageously, by Faure's Accumulators the proprietors of these patents must of necessity derive enormous profits therefrom.

As a practical instance of the value of the invention it is sufficient to state that by its means the Trams and Omnibuses of London can by electricity be worked at less than half the present expense.

Its application, as a motive power for the working of the Metropolitan and Metropolitan District Railways; is one of the most important to which it can be adapted. The absence of heat, smoke, and noxious gases will conduce materially to the health and comfort of passengers; and the lighting of the stations and carriages will also be vastly improved, and much more economically effected.

Sir William Thomson, in his letter to the "Times" of the 9th of June last, expressed himself in the following words regarding Faure's Invention "The subject is one in which I feel intensely interested, seeing in it a realization of the most ardently and unceasingly felt scientific aspiration of my life."

The description of Accumulator now recommended by M. Faure is a battery of rectangular shape, weighing about 50 lbs.

One charge of 4 such batteries will suffice for working a sewing machine for a week.

|   |   |    |   |   |   |   |
|---|---|----|---|---|---|---|
| " | " | 4  | " | " | " | driving a tricycle for 6 hours, or for propelling a boat containing 2 persons during a like period. |
| " | " | 8  | " | " | " | driving a vehicle with 2 passengers for 6 hours.  |
| " | " | 16 | " | " | " | driving a vehicle with 4 passengers for 6 hours.  |
| " | " | 40 | " | " | " | driving an omnibus with 24 passengers during 3 hours.   |
| " | " | 50 | " | " | " | driving a tramcar with 40 passengers during 3 hours.  |

The actual cost of re-charging a battery will be about 2½d., but this price will probably shortly be reduced to 1d. or even less.

The following are the prices of the batteries, payable cash on delivery:—

|              |        |       |
|--------------|--------|-------|
| 1 Battery    | ... .. | £8    |
| 10 Batteries | ... .. | £70   |
| 50 "         | ... .. | £300  |
| 100 "        | ... .. | £500  |
| 1000 "       | ... .. | £4000 |

Over 1000 the fixed charge will be £4 per battery.

With 50 batteries, 80 incandescent lamps, burning in a vacuum each of 10 to 12 candle power, can be illuminated for 6 hours.

✓  
Holborn Viaduct Hotel  
London Nov<sup>r</sup> 1<sup>st</sup> 1881

My Dear Samuel -

Your very interesting Epistles, one  
to me - one to my wife - of date  
of Oct 18<sup>th</sup> are at hand today -  
Mails are all late - the Atlantic  
being unusually tempestuous -  
my wife being still in Paris with  
the Godfrey-Wright party cannot  
as yet answer yours in person  
but I know you will accept from  
me meantime both her own and my  
sincere thanks for the very pleasant  
manner in which you chat about  
our Babies - It is as though we  
saw them at a long distance through  
the Photophone - It is indeed a  
great satisfaction to know that  
they are well and an equally great  
if not greater one to know that  
they so comfort themselves as to  
endear them to others than their  
parents - my own experience of  
children is quite the converse of  
this - but enough of them my wife  
will continue this refrain for  
hours so I will not burden  
my letters with it more than  
to let you know that I too app-  
reciate your thoughtfulness  
in keeping us so nicely informed  
as to their health spirits &c &c.

2  
I note what you say in respect  
to the work in nyork. and am not  
at all surprised that the story  
of continued obstacles to rapid  
work still holds - In my opinion  
it will be well on into the spring  
Edison dare "Pull his throats"  
Nevertheless when one considers  
what it is he is actually doing one  
cannot but marvel at the rapidity  
of the development - He is simply  
installing - the Electric Telegraph - the  
Steam Railway - or other kindred  
human triumphs - in 2 years whereas  
their installation took a score  
or more - Give him my pious  
regards and tell him for me that  
I shall do all in my power to  
Extract from the situation here  
something substantial wherewith  
he may continue his works with-  
out the unrest which comes from  
financial Embarrassment - Mr  
Hobbs and I talk over almost  
Every day - the importance of giving  
Edison 2 or 300,000 Cash to set him  
at ease in this respect. And you  
can rest assured that no matter  
what is done here that will be  
the foundation stone - and it will  
be too - without any sacrifice on  
his part. I cannot now go into  
the various schemes which we  
have considered - they are all  
too unripe - rilly digested to  
yet be put in shape - In fact the  
time is not yet in hand to give

<sup>3</sup> any scheme any very serious  
consideration - since it is our intent  
to first put our House in thorough  
order & learn where we are. We  
canvassing for men or money to  
join us in the enterprise - Still  
Mr. Abbot has always in mind the  
fact that his early return to his  
business in N.Y. is imperative, &  
we discuss at dinner & other off  
hours - the "how" & the "whom" question.  
They almost invariably resolve  
themselves into something like this  
= The D.M.B. wishes to give up to  
English Capital a certain percentage  
for the sake of one or two hundred  
thousand pounds ready cash &  
to enlist the active co-operation  
of Englishmen in the exploitation  
of the thing on native soil - the  
general idea of the use to be made  
of the money would be somewhat  
as follows - a large part to Edison  
- another to the purpose of ~~an~~  
big demonstration. legal contests  
etc etc and a reserve fund -  
I only give you a very vague outline  
for the reason that as yet only  
vague outlines have been drawn -  
the idea I wish to convey is that  
the question of the sale of the thing  
has not yet come up - and when  
it does - it will assume only  
the shape of a partial sale for  
the above objects - the main thing  
being reserved for the future -  
whence the big money lies -

4 for it is absolutely certain that  
it cannot be sold today for a tenth  
fraction of what it is worth. - Swanwick  
Maxim & others have manipulated  
these people here until they no longer  
see in the Edison system anything  
more than others have or can produce.  
It has therefore become absolutely essential  
that the double demons taking of our  
practical and legal standing shall  
be made ere we can form even so  
much as a preliminary syndicate.  
Recognizing this we are hard at work  
in both directions and are holding  
aloof from all considerations of  
either sale or faster with our  
opponents. - Lounery at Paris has  
to some extent been overpowered  
with the powerful sway of the  
English Incandescent Element and  
has lent an attentive ear to the  
talky talky members of the various  
tribes - and has even referred them  
to us - but Sabini - though conservative  
in speech and general deportment  
has - and this I know - very decidedly  
put his foot down on anything that  
looks like a weakness in this  
direction. He says - "Let us first  
leave for ourselves what our own  
position is - then we will know  
what that of others is - and then we  
our deal with such questions as  
they may merit" - This policy I  
endorse most heartily. Edison  
must understand that while  
we shall undoubtedly give due  
consideration to every view of

5 the various propositions that reach  
us - we shall most certainly not  
do anything so unwise as to concede  
anything to people who have nothing  
left cheek to give us in return -  
Swan is the only man who merits  
the least consideration - and he only  
by virtue of the powerful influence  
he has command of - at present  
we are of the opinion that this  
influence is the growth of a  
misconception of the facts - and we  
have resolved to test that question  
by an attempt to educate leading  
men up to a proper understanding  
of the main issues involved - then  
we feel we shall command this  
influential support and sympathy  
and Mr Swan's drift of that will  
be rendered hold indeed for as  
Our investigations progress we  
do not come upon a trace of anything  
of practical value in his possession -  
Already we have Green looked  
for a big lecture expounding the  
Edisvian Idea - endorsing it up  
to the huddle - this will sway all  
the Government following - tomorrow  
I am to meet Hopkins who  
has succumbed to Green's blandishments  
and will after my interview be  
wholly convinced - Others are  
dropping in from time to time  
for Mr Thomson it is feared  
is wholly committed to the Swan  
interest I cannot however believe  
it - I am trying to see him -

6-780 On it goes - We shall in a short time turn the tide of popular opinion and then it will be time enough to consider the question of giving consideration to ~~the~~ the question of "Influence" Meanwhile this is what I am doing

1<sup>st</sup> = Planting the Big Dynamite on the Harbor Viaduct. No 54: we have secured the whole House and will make a grand demonstration

2<sup>nd</sup> Preparing for an Exhibition of about 600 - 16 candle lamps at Crystal Palace - (a special letter about this to Edison in a few days. I am going to Bust the Bubble. Max in Gwan & others flew at Paris or else acknowledge that they are better "showmen" than I am.)

3<sup>rd</sup> Investigating our Lamp Patents in a most thorough manner - Waterhouse is our solicitor and in conjunction with him I am doing just what we did in the Telephone Case - and that work was so well done that no holes have been found in it to this day -

- Assisting in this work - are -

John Henry Johnson Patent attorney  
- Shefford Bidwell an Expert in Electric Lighting & in Patent Law (a member of the English Jury at Paris) -  
And Brauer & Jensen - of whose work

7. I haven't much to say - (By the  
Bye - on this subject another letter  
presently - Edison is paying the firm  
for absolutely nothing) -

4<sup>th</sup> Securing through W.H. Bruce - the active  
aid & sympathy of important scientists  
and newspaper people as against  
all other vicarious interests

5<sup>th</sup> Encouraging the growth of a popular  
endorsement - by selling to the public  
lamps at a price that will enable  
them to make their own installations  
in any manner they please -  
(this we have finally decided to do -  
and I shall send a big order for  
lamps ere this reaches you) -

You must see by this that we have  
a correct appreciation of the situation  
and shall ultimately win - we  
can no more do all this in a day  
however than can you in a year -  
you must not grow impatient  
therefore if we do not order enough  
dynamo lamps etc etc off hand &  
keep your shop in full blast on  
our orders alone - I cannot organize  
an isolation dept in a day - nor  
have I the money to do it - Certainly  
if you find it necessary to make  
a Co of half a million in a year  
to do it - you cannot expect Mr  
Hobbs to put his hand in his pocket  
and do it alone - the matter must  
be put into some tangible shape  
- I hope to be able to report soon



I that it has been done - meaning  
my hands are tied - I am going to  
use the LeDynamos that I ordered -  
- for my Crystal Palace Exhibition - I  
want them all -

I went over to Paris Saturday night  
& returned Monday - Batoh has the  
Opera House all of himself, or will  
have in a day or so. all the others having  
received the notice I told you some  
time ago they would receive - to quit -  
Last Saturday he made a magnificent  
display in the Grand Foyer - & then  
Director was wild over it - Monday Eve,  
- before train time 5 P.M. - He lit it up  
for me - & it was certainly a treat even  
to my eyes - I am however of the  
opinion that he will have a grand  
burst up before many days - He is  
working up too close to his capacity -  
He hasn't a spare machine - He  
says himself - that he simply looks  
on stoically with the knowledge  
that if one machine should fail  
he is dead beat - I have some ideas  
on this subject which I want to  
lay before Edison Eve I put up a  
plant of 10 or 12 of these little  
machines at Crystal Palace - (My office  
will be ready Friday - then I will  
have a short hand man - This is too  
much labor - & keeps me up till day  
break nearly -) -

The Big machine is astounding  
Everybody at Paris - They all thought  
it was a Plating Machine - They  
think differently now - Batoh has

950 16 c lights on it - and now  
Edison Exhibit at Paris does him justice  
His rooms are for that <sup>the</sup> thing - properly  
lit up - & all the paraphernalia is  
in full operation - 250 16 c m lights  
over the Grand Escalier Combel the  
admiration of Everybody - but I must  
return from Paris - Bate's Cantate Care  
of that - If you get my 2nd dynamo here  
in 60 days It will come just in time  
- the work I have to do to plant my outfit  
is something prodigious - I've got to  
go down 18 feet for a bottom - fill up with  
Concrete - & isolate the whole from the  
Building walls - My Chimney is a  
regular factory shaft 100 ft high &  
9 feet at the base Cost 500 lbs. = (2500 \$)  
(London folks)

I started to answer you -  
but have gone so far astray that  
I will not now attempt to get back  
to it - but defer it till another time  
- Give my regards to Mamma & Edna  
- Clark more it all - & remember  
me to the Old man as well as to  
Mrs. I hope she is well & happy  
Send me an Occasional New York  
Tribune, when there is anything  
of interest in it to an American  
I shall write oftener when I  
don't have to do it myself - I quit  
this with the consciousness that I  
have more to say than when I began  
I am going to see you folks as soon as I  
can get hold of Rose to show me the way  
have been so busy that I have scarcely seen Rose  
at all - Love of the Ed & John

London Nov: 3/81.

My Dr Edison -

Crystal Palace Exhibition

The one thing which Paris failed most conspicuously in was 'Reliability' I am therefore going for "that Bug" more particularly than any other - though there are others almost as important.

Instead of having my entire plant of 12 machines run with One Engine I propose to run it with Three  
(4 Engines to Each)  
I will draw-upon my 12 machines for only about 600 lights maximum all machines to lead to one common circuit - I will thus have a margin of 2 machines to go on ere I draw upon the "Battery" for its nominal Capacity viz: 720 Lamps -

If now a machine gives trouble & I have to stop its Engine I shall stop 4 machines - thereby drawing upon the remaining 8 - for my 600 Lamps or - 75 Lamps Each -

I want to ask you some questions

1<sup>st</sup> - Will this be too severe a strain on the 8 - for a few minutes say 10 or 15 - until we can start up again - or shut off some of the Lamps -

2<sup>nd</sup> Can I sufficiently increase my

2<sup>nd</sup> Field Strength in the remaining 8  
to bring my Lamps up to 16 Candles  
- Always providing my Steam Power  
is sufficient - and even the Opening  
of the 4 machines. One at a time  
- but in rapid succession be likely  
to make my Belts Slip?

3<sup>rd</sup> Will the stoppage of the Engine  
driving the 4 machines without  
Opening the Dynamos - or rather -  
before Opening them result in harm  
to their Armatures - or in Overburdening  
the other 8 machines by reason  
of the fact that the 4 on ceasing  
to be active simply become low  
resistance Arcs across the mains?

If so I will put in a switch for  
each Battery of 4 - so I can in  
an instant Open the entire lot &  
then ~~close~~ quickly stopping my  
Engine - probably save myself from  
any considerable wreck - such as  
I saw at Paris - which was due  
to lack of facility for quickly stopping  
the Engine - Will this sudden withdrawal

of the 4 machines at one blow of a  
switch - too suddenly & heavily tax  
the capacity of the other eight?

~~Will~~ You see my point =

I am going to obtain it. Even if I  
have to use 4 Engines & run 3 machines  
on each - This would give me  
sufficient margin in all the above  
particulars would it not? =

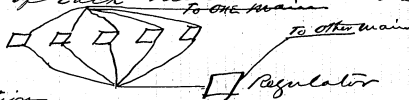
I hope however you will tell me

3 I can do it with 3.

My Idea is to demonstrate practically - but on a limited scale - your method of obtaining reliability by the subdivisions of your Power = this I can do in the way I propose without the use of the Big Dynamos. In fact if I had only one Big Dynamo I would not show reliability at all = I want the failure of a machine to show simply a momentary decrease of light - but never a total Eclipse. I want to be able even to demonstrate this by a practical Exhibition of the result of actually stopping any one of my 3 Engines!

### Regulation

You will observe that in such an arrangement a quick & ready means of increasing the field strength is important to produce a good effect. It has occurred to me that I might obtain greater efficiency in this respect as well as save a machine - by dispensing with the exciting machine and let every machine make its own field - To do so I should of course have to introduce one regulator into a common lead wire from the field of each machine. Thus -



### Questions

1<sup>st</sup> Can the proper Resistance for such a Regulator be practically made.

4. - For so many as 12 machines?  
Would the resistance of wire  
& other parts of Regulator have to  
be  $\frac{1}{2}$  of that used in the single  
machine regulator - or is there a  
large margin?

2nd. - If I stopped one Engine would  
the feet of the 4 machines thus  
ceasing to supply their own fields  
result in altering the conditions  
in respect to the other fields, and  
thus make it necessary to radically  
alter the position of my Regulator?

If this is at all problematical  
of course I shall not attempt it =

If not & you advise it - please  
make & ship by mail steamer the  
requisite Regulator & Resistances

I want to illustrate "The Edison  
System" = and not rely solely on  
the Exhibition of a Lamp =

In respect to the Big machine of  
I shall hang up Photographs of  
it - liberally - & accompany them  
with an explanation of why it is  
not on view at the Exhibition and  
append an invitation to all who  
may care to see it in practical  
operation to come to the City where  
it is in daily use lighting up the  
Premises of ~~the~~ Edison - the Street  
Lamps - Shops &c of the Holborn  
Viaduct = I shall take care  
that Capital is made rather than

send me a lot

5<sup>th</sup> lost by its absence from the Palace - I calculate by this & other means to make my London Establishment a sort of Supplement to the Exhibition =

Engines There are no High Speed Engines worthy of the name in this Country and I am of the Opinion that I can make quite a stir with a good one of those 20 H.P. Double Belt wheel Engines - by putting it up at the Palace & driving a couple of Half light Dynamos with it. 240 Lamps - almost Equal to Paris standards (If I bring them up a little) This as a sort of Auxilliary Show to my regular Outfit - I hope you have therefore sent me a Good one =

Lecture Preece is preparing his Lecture on Paris Exhibition - to deliver it before the Society of Arts in Decr - timing it with the Opening of my London Shop & the Crystal Palace Exhibition = so as to create a furor - (This is his Idea - He wants some glory)

### Competitors

Don't give yourself any concern on this head - all that has been said about it has emanated from Mr Lowrey at Paris - but all here are of the Opinion that all such talk is premature = We have fully decided to do the following things before even so much as listening

Go to the Temple -

1<sup>st</sup> - Make our Big demonstration & realize its effect on the Public & on the would be amalgamators

2<sup>nd</sup> - Thoroughly explore the literature of the subject & learn whether the proportion of ownership & rights are 98 or 99 Per Cent Edison & 2 or 1 Per Cent the rest of mankind -

3<sup>rd</sup> - And in this I heartily concur

- I shall every effort to secure to ourselves the scientific & popular "Influence" of which Swan so loves to boast & now in his possession - and upon which he principally wants to trade - This is rapidly coming & our

Hopkinson being the latest addition - (I am to see him tomorrow to jolly Jellie him) -

Then if we ~~find~~ find that there is still enough of Swan remaining to buy - we may possibly throw him a small sop - but that we will is exceedingly improbable

- As it dawns upon those who at first advocated this idea of amalgamation

- How much we have & how little Swan has - they rapidly recede from this position & heartily concur with us in ~~the~~ opinion that he can be annihilated easier than he can be caught - Time will resolve this view into one of whole antagonism to anything ~~like~~ having the semblance of compromise -

Appropos of this!

Favour Battery - these people



I am jubilant over their Railway  
success - and they see a great  
business in this & other fields  
not readily accessible to us - they  
have therefore been most friendly  
to us - and are seeking in many ways  
to become identified with us -

We notified them yesterday that we  
were prepared to supply them with  
lamps by the 1000 at 5 shillings  
and by the 10,000 at a reduced rate -

I sent them a few sockets & lamps -  
Today they called & were exultant  
over both - they say they will now throw  
out all other lamps - (Maxim & Swan  
have thus far filled their show windows  
& literature) and use only the Edison  
they say that at 5/- it is impossible  
for Swan (or others) - to compete with  
us - that out of 100 Swan lamps -

20 will vary within as many hours  
of one resistance - 20 of another  
& the remaining 60 will be practically  
useless - How - that? - This explains  
the Savoy Theatre variation of discontentment

Mr. Habbro & I are going Sunday  
to see a new Pullman train - on the  
Brighton Road - lit up with Swan  
Batts & Edison lamps -

This sort of thing will educate the  
people to our standard - & popularize  
us - I am fitting up their (Savoy) - shops  
with our fixtures -

These people want to know if you  
will entertain a proposition  
to build a large dynamo say  
5 or 600 H.P. - ? =

Isolated Business = We have finally

8  
determined that until we get our  
present work in operation - our  
resources are too restricted to engage  
in this business - and shall postpone  
its active development until about  
the 1<sup>st</sup> of January = What with a Big  
show in London - another at Crystal  
Palace - a lecture at Kensington (Queen's  
society of arts exhibit & lecture) - and  
all the legal & other literary work  
now on hand we are of the opinion that  
I at least have quite as much as I  
can properly attend to = of course  
if a customer comes along who truly  
wants a machine & lamps & will  
himself furnish all the engineering  
& electrical talent to put it in practical  
operation - we shall not refuse to sell  
to him - In fact I think in this way  
we shall do considerable business

London Plant = This progresses as fast  
as the manual labor can be performed  
working night & day - the brick shaft  
will require 5 weeks for its erection =

Other work goes on meanwhile - as best  
it can ~~overcome~~ <sup>assist</sup> the obstacles of official  
hindrances & ignorant labor - It is  
no small job to plant such an outfit  
within the compass of the 4 walls of  
a City business house - Permits of  
all sorts have to be secured - and  
were it not for the intervention of some  
of Mr. Habbins' friends we could hardly  
be enabled to even so much as break  
ground - The permit to do so not yet  
having passed the various red tape  
routine - we are only - as I say - able to  
go on because our friends have  
by underground means got our doings  
ignored = more anon

The Edison Electric Light System  
(four signs)

Edison & H. Johnson  
managers

*English Light*  
*Dracell, Morgan & Co*

P.O. Box 3036.

*New York Nov 3rd 1881*

*J. A. Edison Esq*  
*Resent*

*Dear Sir,*

I am in receipt of a letter from Mr. Tabbri, in which he enquires how the large dynamo for London is progressing; and says it is of the utmost importance that this should be pressed forward to completion as rapidly as possible, so that should anything happen to the one on hand, there may be no delay arising therefrom.

Please bear this in mind, and report to me how speedily you will be able to ship the same.

*Yours very truly*  
*Isidor Singer*

London Nov 8/8.

My Dear Ince.

Your cable in re to my lamp factory assessments at hand you will find by my letters that I had already arranged with Mr. Gabbri for its payment. It seems however that he had forwarded instructions to rewire by mail and not by telegraph as I thought. I then asked him to cable and he said he would. This provides for 1000 £ - you now ask for 1500 £ = By the time you get this I hope to have several thousand dollars at hand and you will then be able to meet all my assessments promptly. If this source should fail me - I shall ask Bergmann to pay them - It is now quite true that Worcester Jr. should be in a condition to permit of my drawing upon it for at least a few hundred. How does he (Bergmann) get along with Edison - I have not asked him as to our business - I am considering the question of making a beginning with our isolated business - Godfrey Gabbri and I had it all over again today and Gabbri has left the final decision with Godfrey & myself and gone off to France for 3 weeks. You will learn by next mail what we decide to do. Godfrey is in favor of bringing out men from America and organizing to do the work ourselves - but I insist on having the money provided before I begin

the question is therefore only one  
of money - If Godfrey says O.K. - we will  
provide the funds - then I shall send  
Edison a cable for men at once -  
you will of course learn all about  
this by cable before receiving this -  
I think it improbable that even if  
we go into the isolated business I  
shall be able to send you any very  
considerable orders for dynamos  
for a few weeks - Edison certainly  
seems to think - judging by his cables -  
that all I have to do is simply to order  
machines - In point of fact I am not  
sure of my ability to sell a single  
one of those already ordered - as far  
as I can learn our prices are a  
long way above those of other makers  
- I am now trying to ascertain reliably  
what the actual price charged  
by Siemens is for a machine of equal  
capacity to ours - as soon as I do  
I will send it to you - If, as my  
present information goes, it is much  
less than ours - we shall have to  
do one of two things  $\frac{1}{2}$ : Come down  
or not enter the market - I have  
a circular giving the price of  
a Gramme machine capable of  
working 50 incandescent lamps of  
20 candle power each at 110¢  
less than the cost of our machine  
delivered on the frame in  $\frac{1}{4}$ .  
Price is however getting me more  
accurate information concerning both  
the capacity & price of machines

Yours Truly, C. Johnson  
address 57 Halborn street

English  
New  
York  
Edison

London Nov<sup>r</sup> 8/8.

My Dr Edison A letter from Upton tells  
of a contemplated change in the form  
of our socket - devised by Bergmann -  
to avoid the breaking of the Plaster &c  
- this in my judgment is radically wrong  
It is of the utmost importance that once  
having established a standard in anything  
we should not depart from it - I  
have sold 1000 sockets & shall have  
to sell several thousand more for  
the lamps I have on hand and  
which I am now ordering shall have  
been disposed of - this puts these  
sockets out permanently - & you would  
always have to supply them with  
lamps suited to them - thus two  
standards would be out - It seems to  
me the proper way is to use on  
the lamp something more substantial  
than Plaster - It is bad for other reasons  
than want of strength - It softens under  
certain conditions and gradually crumbles  
Batchelor is of my opinion as he  
has had a similar experience -  
It is very much cheaper to have  
some material capable of being  
moulded - see the Celluloid Co at  
Newark - there was a man in New  
York yesterday about a plastic  
material they have which he says  
is very cheap & very tough - I don't  
know anything more about it - I  
shall help you work off the Co old  
thousand lamps now in stock  
but certainly think it would be  
wise to remedy this defect even in  
a goodly portion of them - as already  
I have had complaints of breakage  
- the Faure Battery people

have bought 1000 B Lamps & 1000 Sockets of me - and ask me for a price "for 10 000 Lamps per month commencing January 1<sup>st</sup> and running regularly through the year with a probable increase of the number"

Please say what you think of  $\frac{2}{6}$  or  $\frac{4}{6}$  for these - they will use mainly  $\frac{1}{2}$  Lamps - at least at present - In view of this sale & the receipt of a letter from Upton saying he could not send me the 2000 B Candle A. Lamps called for in my order - I today cabled you to convert the order into 2000 B Lamps & refer you to his letter

I hear Crookes is out with a new Lamp - the Carbon being Extraordinarily tough - It can - it is said - be tied in a hard knot without breaking My informant is trying to get hold of one - I believe the material is thread of some kind - Have you given much attention to threads?

Maule will explain about my Lamp Factory assessment - I will manage better in the future =

See Godfrey immediately on his return If you approve our scheme of a preliminary Syndicate to be formed immediately on the demonstration here - you will be placed in large funds by Christmas -

We succeeded today in getting our petition for subway rights referred to

<sup>3</sup>a Committee with power to act  
over which Mr John Whichcord  
Mr Hobbs friend has considerably  
influence - we are therefore almost  
certain of obtaining the permit  
by the time we are ready to enter them  
with our Pipes -

I shall probably want additional  
Pipes am now having measurements  
made - and will order by telegraph

Whatever I want over & above  
What I have & what Batch is going  
to send me -

We are reconsidering the question of  
isolated business - see Inwards letter  
& will probably organize for it after  
all - at all events you must have  
some confidence in my doing the  
best I can with the means at my  
Command - Your cables do not  
seem to imply a total faction with the  
extent of my orders, while I was  
congratulating myself that I had  
made an extraordinary good stroke  
for you - considering the obstacles  
which I have to encounter in

getting into working shape  
Remember I haven't the personnel  
of Co. 5<sup>th</sup> Ave - or the money either  
- I must gradually feel my way to  
both - & am doing it in my own  
way - since I cannot do it otherwise

Yours in haste to catch mail  
E. H. Whistler



London Eng. Lord Mayors Day 1881

My Dear Edison (Nov. 9, 1881)

My Communications from DeLany in  
re. to the progress of our Cable sales  
give unpleasant impressions. It seems  
you have finally determined upon  
putting down wires in your trenches  
& in using the T B T B wires for the purpose.  
It is of course significant that with  
all my correspondence from New York  
I should learn of this only through an  
Outside source - You will remember that  
in going in with DeLany on this thing  
I had your advice - I don't recall this  
for any other purpose than to show  
you that in ~~doing~~ making this Outside  
Alliance I was clear in my mind that  
I was not running counter to anything  
of yours. What I do want is to know  
squarely where you propose to stand in  
this matter in case the more extended  
trial of our Cable now being made at  
Pittsburg shall demonstrate that we do  
attain practical result of neutralizing  
the present obstacle of interference.  
No matter what you call it - or no matter  
whether we first magnify it & then destroy  
it - If by our Cable it becomes practicable  
to use underground wires for telephonic  
purposes (single ckt's) - and our cable  
can be made as DeLany secures men  
for 12 per lb above the price of Ry. Road.  
Where will you stand =  
~~For~~ This question is now determined - so  
will my Cause be - rather than be led  
into an Opposition Shop - I'll drop my  
interest in it & let DeLany run it  
alone - you know this, & cannot therefore  
take anybody at any straight-forward  
questions - money hasn't sufficient  
power over me to lead me to reverse  
my position of the past 10 years -  
Even when it is - as in this case - actually  
being deposited to my credit in

The tangible form of Hard Cash -  
Waring & Co. are evidently bent on  
a real deal - and it seems to me  
that there is as much to be made  
out of them as of any other outside  
concern - I do not understand that  
you are proposing to put down that  
Cable of yours which Hansen showed  
me - If my information in this respect  
is wrong & you do contemplate doing  
so - then of course all I have said  
here goes for naught - that being your  
own invention of course alters the  
Complexion of things -

At all Events I should like to know  
~~from~~ your own mind on this  
business simply as a guide  
for my action -

~~You would not~~ Please to report on the  
Patent without letting him know  
I was interested & the reports to the  
Effect that there is nothing new in it  
& that it won't work - Except to Neutralize  
Static Induction - Magnetic Induction he  
says can only be overcome by metallic  
Circuits - Will you does he know that  
we have not a metallic Ckt - when we  
put each of our wires 4 times nearer  
to the mass of lead than they are to each  
other & that mass of lead earthed as well -

- but the Test will tell -

Yours Truly

Ed. Johnson

Original Copy  
J. A. Johnson says  
Edmond

THE EDISON ELECTRIC LIGHT SYSTEM.

EDW<sup>d</sup> H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

Thomas A. Edison Esq. - London, E.C. Nov<sup>r</sup> 12<sup>th</sup> 1889

My Dear Sir,

Transmitted herewith are certain papers and documents bearing upon the question of the validity of your English Patent: You will observe in Mr Bidwell's reports a disposition to dogmatize as to the value of this & that feature and in various ways an expression of positiveness - this I trust you will not take personal exception to, as it is a trait in the Gentlemen's Character which is not without its value. & as in other directions - He has been selected by us for this work because of his "Honesty of Opinion" and because of his known lack of enthusiasm for any particular inventor - we aimed to obtain the hard cold facts untrigged with any desire to give a false color to them - In fact we rather preferred that if any partiality was shown it should be in the direction of toning down rather than coloring highly the picture for us. Please therefore understand that we appreciate at its full valuation the report in question and give your views on it without reference to its tenor =

You will see from Mr Waterhouse's letter to me what our present conclusions are - We send the papers to you at this stage not because we have reached definite conclusions but simply that at this stage we

## THE EDISON ELECTRIC LIGHT SYSTEM.

EDWARD H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

May have the benefit of your views <sup>1888</sup>  
 on the various points which thus far  
 we view as vital issues =  
 I have just read Swans Lecture "Electricity"  
 Oct 1886 - and find therein evidence of  
 nothing but a King Far Lamp - or in  
 other words, the usual low resistance Carbon.  
 - For in a Paragraph which has not yet  
 had sufficient attention - he says = my  
 present Carbon - (Oct 1886) - is but  $\frac{1}{20}$  th  
 as thick as all former Carbons &c &c  
 - which of course makes his former Carbon  
 though undoubtedly made of Paper - a  
 Carbon stick or rod - of low resistance  
 It is very evident that a Thread of  
 Carbon was never used by him - Now  
 the question is How shall we secure  
 by this Thread = we cannot do it by  
 reliance upon High resistance simply -  
 we must in some way connect this  
 High resistance ~~with~~ in Combination  
 with certain other things :  
 In reading over Swans Paper I am  
 wonderfully impressed with certain  
 things - as for instance =  
 his evident conviction that the obstacle  
 of volatilization was an insurmountable  
 one - This conviction caused him to lay  
 his Paper Carbons away as of no value  
 & explains why he never sought to Patent  
 them - He evidently thought with fortune  
 that to attempt to overcome this difficulty  
 was a mere waste of time - and he  
 accordingly wasted no time on it -  
 - until after your published description  
 had reached him - then seeing his  
 error - he renewed his experiments

EDW<sup>d</sup> H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

London, E.C.

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and by the aid of your Patents & Other descriptions was easily able to copy & exhibit your Filament Lamp.; and having, as he says, previously used all the ~~vital principle~~ component parts viz: Carbon, High Vacuum & Glass Chamber - he was easily able to make out a case of plausible right of discovery. Especially as the germ of the thing viz: High resistance & minimum of radiating surface - was not readily recognized by even the most learned of his audience as that vital principle which divided your success from his & others former failures. And again: I am impressed with the fact that even at the date of this lecture he is woefully ignorant of the value of this High resistance - as well as of how to obtain it - this is evidenced by his free assertion that you could not be able to obtain that degree which you set up as a requisite one. In fact the whole lecture bears on its face evidence of a sudden awakening and a rush to give voice to an opinion on the subject "before the meeting" without any clear idea of what stage the discussion has reached.

It is my opinion that all this can be so easily shown that Swann will be wholly unable to prove prior publication - and that consequently the issue is as between your Patents and Others on various features - details - in fact

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57, Holborn Viaduct.

London, E.C. <sup>1888</sup>  
 Simply a question of how much we  
 shall have to make Public ourselves  
 by reason of not having <sup>it</sup> properly  
 protected - Take for instance the Swan  
 Patent on heating the Carbons during  
 process of obtaining the vacuum. You  
 apply this process to metals & remark that  
 it may be applied to "sticks of Carbon".  
 - but when you come to your Carbon  
 Patent you make no allusion to it -  
 and no where do you claim it for Carbon  
 - Swan jumps in & applies it to Carbon  
 filaments & claims it - now this claim  
 can easily be upset no doubt - but only  
 by proving in our Patents and in other  
 ways "Publication" - We cannot amend  
 or amend our Patents as to get in a  
 claim on the process as applied to  
 your present Carbon Lamp - at least  
 such is our present opinion - When  
 Henry Johnson will however be called  
 upon in due time to say whether there  
 is enough in your reference to Carbon  
 sticks in your Platinum Patent to  
 enable you to cover its application to  
 the filament - If not then we must  
 make you 'Publish' the process & then  
 destroy Swans Patent - Otherwise we  
 must pay tribute to Swan for an  
 important invention made by you -  
 In <sup>my</sup> previous letter - I stated that  
 we were giving more consideration

EDW<sup>d</sup> H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

London, E.C.

1888

to Lane Fox than to Swan - owing  
to his having so curiously circumscribed  
you in respect to the Essentials of Carb-  
-division  $V \frac{2}{3}$  High resistance &c. - we are  
still of the opinion that this means  
discreet but impracticable publication.  
has limited the scope of your claims  
but inasmuch as your claim is for  
a filament of Carbon - & Fox does not  
claim Carbon - we think we can hold  
the claim - thus making your monopoly  
good so long as Carbon is the only substance  
suitable for the purpose - a long time  
to come I fancy.  
Lane Fox too interferes with your  
Platinum wires through the glass at  
the sealing point - but we hope to hold  
the "Combination" for you -

Mr. Preece is at Newcastle hunting up all  
the evidence that is possible of obtaining  
in respect to Swan's early use of Carbonized  
paper - & all the facts generally to the right  
end that we may determine how far we  
shall have to go in our disclaimers -  
If we can hold the broad claim to  
the materials of which we make Carbons  
- including Paper - then we shall have  
an altogether distinct hold - aside from  
your Combination claims -

In your Patent No. 17 - claims 4 - & 5 - are  
in our way - they look too much like  
a late discovery of the fact that your  
old Platinum process is applicable  
to Carbon - & that Swan has shown  
you such to be the fact =

I explain the appearance of this claim

EDW<sup>d</sup> H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

London, E.C.

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At this stage - to my waterhouse - in  
two ways - 1<sup>st</sup> - you now find that it is of  
great value not only to bring the lamps up  
to the degree of incandescence at which they  
are to be used but to a much higher one -  
therefore you make a new claim =  
2<sup>nd</sup> - that in the U.S. the right to an  
invention is determined by the frank of  
early use the inventor can show - & that  
in this case you probably have been  
led to remedy the apparent oversight in  
claiming the process as applied to Carbon  
by applying for a new Patent - depending  
on your ability to go back to your  
Platinum Experiments & trace them  
down to your application in Patent of -  
a constant use - that this would be  
sufficient in the U.S. to give you the  
Patent - while in this Country it would  
have no effect - except as herein used -  
to explain its early presence in so late  
a Patent =  
In this Connection it occurs to me to  
advise you against filing here your  
applications - drawn for the U.S. & secure  
some old invention not previously  
properly protected - and which some other  
Claimant has subsequently attempted  
to Patent - In the U.S. you may prove  
your right of priority & obtain your Patent  
- In this Country you had far better  
rely upon a liberal reading of your  
Earlier Patent - a subsequent claim  
only weakens it - without affording  
in itself the slightest protection - It is  
worse than money & time wasted - it is



EDWIN H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

London, E.C. 188.

positively injurious = better explain this to  
Wilber =

Approach of this whole subject of  
your English Patents, I cannot see  
that you have as yet profited very  
much by our old telephone experience  
and I now renew - after the lapse of  
2 years - my recommendation that  
you change your method & agency  
of obtaining your English Patents =  
The intermediate position occupied by  
Breuer & Jensen is one of cost to you  
without the slightest return =  
If your future Patents are to be of any  
value - they should pass through a  
channel which would scrutinize  
them with reference to what has gone  
before - In my judgment every application  
for an English Patent should be made  
by some one having the knowledge which  
he could apply - of the requirements of  
the Patent Law of England just as Wilber  
does in re. to the U.S. = If you say  
so - I will at once employ a thoroughly  
reliable Patent Agent who will undertake  
to do for your English Patents what Wilber  
does for the U.S. & let the good work  
begin at once - It makes me shudder to  
think of the valuable ~~future~~ Patents  
yet likely to be filed in England in the  
same disregard of the Law as have  
the long list with which we have  
had to deal - Think it over & let me  
know what your conclusions are

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THE EDISON ELECTRIC LIGHT SYSTEM.

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Dynamo Hopkinson's report. I am in doubt as to what course to pursue in this matter - we have inaugurated the same systematic research & investigation in respect to the dynamo ~~now~~ as we have in operation for the lamp - but pending its conclusions - shall I go to Siemens & tender the Royalty - some of us view that as the wiser course which others oppose it - Siemens is said to be a man who prefers a Royalty to a litigation - It is only a question as to whether he will be moderate or exacting if the latter we may in a certain sense compromise ourselves by the tender. On the other hand we may - if we do nothing - leave the field open for him to serve an injunction about the time we want to float our Company which would be disastrous - better advise me by Cable on receipt of this what to do - Do you know why Siemens failed to get a patent in the U.S.? - Does that reason whatever it may be - have any bearing on the validity of his English Patent - that is our present question - Let me hear from you fully & promptly on all these issues - your assistance is of great importance at this stage

Very truly Yours.

Edw. H. Johnson  
Manager

London Co

1, NEW COURT,

CAREY STREET,

LINCOLNS INN, W.C.

12<sup>th</sup> Nov. 1881.From WATERHOUSE & WINTERBOTHAM,  
Solicitors.

Dear Sir

## Edison's Electric Light

I beg to send you copy of a Report by Mr. Bidwell on Mr. Edison's Patent for lamps used in his system of electric lighting. You are aware, that I instructed Mr. Bidwell to make the investigation, of which the result appears in the Report, on Mr. Beech's recommendation. Mr. Bidwell is a Barrister, a member of the Society of Telegraph Engineers, and was, I believe, one of the jurors at the recent Paris Exhibition. He possesses therefore both legal and scientific qualifications for the work in question.

The main conclusions of his Report are those at which, as you are aware, I had myself roughly arrived - viz. that Mr. Edison's Patent of 10<sup>th</sup> Nov. 1879 will give him a monopoly of the incandescent lamp as now manufactured, provided (1) that there was no prior publication by Mr. Swan or any one else of such a nature as to make the lamp on that date no longer new, & (2) that Mr. Swan's Patent of 2<sup>nd</sup> January 1880 does not prevent Mr. Edison from exhausting the air from his lamp while the carbon is incandescent.

I understand that Mr. Edison made this lamp in this way at the date of this patent of 10<sup>th</sup> Nov. 1879 but he does not claim this detail; and does not in fact in that patent allude to it. I should have supposed that he then relied upon the description of the similar process as applied to metal conducted in his previous patent of 11<sup>th</sup> June 1879, & there stated to be applicable also to carbon sticks, but for the fact that in his Patent of the 2<sup>nd</sup> February 1881 he has a claim No 4 which appears to be identical with Swan's claim of the 2<sup>nd</sup> January 1880. The fact that this claim was made after Swan's is, under English law, a damaging feature in the case. I almost however think that on this point we need feel any great apprehension. The more important question is as to the publication of some description of the lamp prior to the 10<sup>th</sup> Nov. 1879. Mr. Swan alleged in his lecture at Newcastle on the 20<sup>th</sup> Oct. 1880 that he exhibited such a lamp as that which Mr. Edison claims as long ago as 1873. But as yet we have his assertion only for this statement & it does not follow that exhibition would be equivalent to publication. As to what Mr. Swan actually did we are making careful enquiry. But what may have been done by persons who saw or were informed of

what Mr Edison was doing prior to Nov. 10<sup>th</sup> 1879 is a branch of the question almost more important to us than what Mr Edison could perhaps himself keep us. Did he show or describe the lamp to any one before that date? If he did is it not probable that an account of it would find its way into some American paper & from it into some paper here? It is most desirable with a view to our action now that we should know as speedily as possible what is the chance of danger in that direction.

It will be very useful to me to have Mr Edison's own observations upon the various points raised in the Report, & I therefore send you a copy with space left for such observations for you to forward.

I am, Dear Sir,

Yours faithfully,

Theodore Waterhouse

C. L. Johnson Esq.

57 Holborn Viaduct

C.L.

[ENCLOSURE]

I also send you as requested three Book Copies  
of Lane's 5 Patents - namely,

1878 N: 3988  
4043  
4626

1879 1122  
1880 3494

ZK.

3  
May 12/81  
Watson

THE EDISON ELECTRIC LIGHT SYSTEM.

EDW<sup>d</sup> H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

My <sup>dear</sup> Mr Edison London, E.C. Nov<sup>r</sup> 15<sup>th</sup> 1881

I am sending you my letter of  
Sundays date & am in receipt of  
copies of the reports therein refer-  
ence of the within letter from Mr  
Waterhouse - He is now as much  
preoccupied over the question of how  
what you published by you on the  
Early publication of your Menlo Park  
work, as of any of Swans publications  
- Question: Tell us how much time  
elapsed between the time you forwarded  
your applications Patent No 5 - &  
the 1<sup>st</sup> public description thereof in  
America (when it appeared) -  
- Again - since it is possible we  
may have to prove publication of  
the method of "heating which Exhausting"  
in order to break Swans Patent  
(Can we cant hold it for  
ourselves? - we would like to know)

EDW<sup>d</sup> H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

If in any of the ~~patents~~ <sup>1888</sup> ~~specifications~~ <sup>before</sup> 2<sup>d</sup> Jan'y 1880 - the date of Swann's  
patent - the process was described by you  
as applied to your Carbon Lamp -  
= the difficulty of holding this & your  
Carbon Lamp is going to arise from  
our own efforts to show a wide  
difference between Carbon sticks or  
rods - & a Filament = we shall be told  
that if there is such a difference  
then your reference to the applicability  
of the process to Carbon sticks or rods  
does not carry to Filaments -  
What's gained for the goose &c  
Don't let time lag in replying  
to all these points -

The reports & Blue Books by Brook  
Pook - & possibly may miss this mail

Yours Truly

Edw<sup>d</sup> H. Johnson



*Ed*  
THE EDISON ELECTRIC LIGHT SYSTEM.

EDW<sup>d</sup> H. JOHNSON,  
MANAGER.

*Brief*

57, Holborn Viaduct.

London, E.C. Nov<sup>r</sup> 19<sup>th</sup> 1881.

My Dear Edison

- A. Got Permit to use Subway - and to light  
street lamps (80) and shops - 60 to 80 =  
Got it yesterday - and am going on the work tomorrow
- B. Got Permit to erect my big Chimney - had it  
partly done when permit was granted
- C. Got the requisite water supply - very difficult  
had to build two tanks to hold 7000 Gallons -  
Ever City could connect us with main
- D. Got Official Space allotment C. Palace  
Gang men start in tomorrow making  
foundations & wiring place -
- E. Got good contract Robey & Co Eng. makers who  
loan us 3 Engs 25 H.P. (nominal) for costal  
during Exhibition - without charge other  
than expenses Carriage &c -
- F. Got D.M. & Co permit use \$25,000 for  
starting isolated business - shall order  
10 more machines from Yonkers as get a  
shop. Gurnaud been playing fool with  
me - keeping me on string to win him in  
use his telephone shop - his Directors would  
consent & I told him not to go to &c -
- G. Got an Opinion on Lamp Patent No 5  
(Gone out to you - for report) - am now  
investigating it further - also other Patents
- H. 2 = Brush is applying for his claimer  
on some detail of one his Patents in  
which he claims the Electroplating of

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Carbons - and the desired ~~not~~ of feed  
the Field - sent to me to smell him  
out & see if he was after us - those  
2 things are all I can find that  
apply for. are to know in day or  
two what he is really driving at.

No = App. - an A. Dynamo at work at the  
Hause Bath place being driven by  
a Gas Engine -

No - 2. Spot wind of two facts by reason of this  
alliance - 1<sup>st</sup> Battery can't be relied upon  
for more than 2 hours - without recharging  
- if they do any practical work - result  
they are casting about for Dynamo to be  
attached to Engine & 2<sup>nd</sup> the Intervention  
of Battery between Machine & lamps - don't  
dispense with necessity perfectly  
regulated motion Dynamo - slightest  
pulsation is shown - just as if Battery  
not on -

I. Got for Mr. Thomson on a string (at last)  
Letter from him to the Duke - asking for  
the return of the lamps you gave him  
- which was ref'd to me in Duke's absence  
my reply expressed your surprise that he  
had not all along had possession -  
I sent him 50 A & 50 B. & 50 sockets  
- wants light his Lab. & House - his ref.  
to me very cordial - & alludes to great  
difficulty found in locating adapting  
lamps to Dynamos &c = recited case  
of a friend - large Estab. near Glasgow

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MANAGER.

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who sent for him come & help them -  
says - failure due to lack adaptation  
one to other - & asks if we are ready  
supply your 3 Dynamos -  
promote him immediately - was organizing Dept for  
that purpose - but pending preparations for  
be glad place machine his disposal to  
with as pleased - deferring all questions  
Sale - future - Expect hear from him tomorrow

I 2 = Got an Idea - though he is now  
- committed on lamps & relations with  
Edison - am of opinion it is because his  
relations with Francis Baily - now that  
we run that Institution & exclusively  
- no other lamps being used - believe  
way is open get old man in right  
channel - am after him -

Idea 2 = His Committal Speech at York  
on your machine - leads me  
think it easy get him publicly endorse  
our Dynamos as best in Mkt =  
going to try - as must in some way  
provide for higher price than others  
- beside want High authority upset  
wasting slings in Times - so can  
go to friend MacDonald & show  
him injustice being done - want  
to prophesy at my "Opening" speech  
- that present Condemnation your

EDWARD H. JOHNSON,  
MANAGER.

57 Holborn Viaduct.

London, E.C.

1888

Dynamo - he followed by usual  
invitation later on - back up the prediction  
by for Wm's opinion (show same Austria  
- in Telephone case - was in advance  
Others) and City facts about refusal  
English Scientist - got called - ~~refused~~  
except accomplishment for div. City  
till an Eng. invitation had been made.

I - Got plenty of work to do -  
+ a little done

H. Got the guts to do it - if they  
don't give out.

L. Got no return Ticket home yet

M. more anon -

Yours Truly

Edw. H. Johnson

W.B. got 3 Lectures on in Dec. by

W. H. Preece

THE EDISON ELECTRIC LIGHT SYSTEM.

EDWARD H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

London, E.C. 20079<sup>2</sup> 1881

My Mr. Edison -  
I send by today's mail - a copy of  
Blue Book 2003. Brush's Patent -  
You will see he is "disclaiming"  
wholly the Electroplating process -  
This means that he has found it to  
be old - or someone else has a valid  
patent on it. We will come across  
the facts later on -

What I want to call your particular  
attention to - is the Fourth Head of  
his Invention viz: the method of  
maintaining the field by derived  
Ckt. - I thought this was old - & even  
one could use it - ~~Off~~ Brush is  
putting this Patent in order - &  
leaves that feature untouched &  
presume his investigations have  
resulted in the finding of nothing  
to violate it - In that case  
where are we? - Do you propose

EDWARD H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

London, E.C.

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to use the derived E.M.F. in your  
big Central Station plant? - I am  
under the impression you do not  
& acting on that impression I  
have given my Counsel the  
opinion that the thing is of  
but secondary importance to us  
- while of vital importance to the  
Interests which deal only in small  
installations - Now about this?  
The question is whether we shall  
Oppose Brush's attempt to put  
this Patent in Order or leave  
such Opposition to Others -  
recognizing the importance of not  
antagonizing an interest with which  
we are thus far on good terms  
I have advised not entering  
an Opposition - If however I  
am wrong in respect to your

EDWARD H. JOHNSON.  
MANAGER.

57, Holborn Viaduct.

London, E.C. 188

Not using it in your Central Station  
plant. you should cable me at  
once "Oppose Trust" - my impression  
is from that you told me you  
should ~~drive~~ excite the fields with  
a separate machine - If this is  
correct - How do you expect to  
ensure absolute reliability? For  
Even though ~~it does~~ the exciter does  
but little work. Its engine might  
fail - & thus Extinguish your whole  
plant - put me straight on  
this promptly - by cable if swift.

Your answers to the questions  
I asked in 72 - to Crystal Palace  
arrangement of dynamos will  
help me no doubt - I trust  
they are on the way -

Yours E. Johnson

English Capital  
Mar 22 1881  
J. D. Edison  
MANAGER

THE EDISON ELECTRIC LIGHT SYSTEM

57, Holborn Viaduct,

London, E.C. Nov<sup>r</sup> 21<sup>st</sup> 1881

My Dear Edison

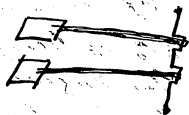
See what we done & gone  
& done - all of us -

Thomson, Brown & Co of Glasgow  
have produced a Gas Engine  
which gives an explosion at Every  
Stroke - It has just been tried  
& works like a charm - Mr T.  
is fixing one at his house - Mr Webb  
our machines on it. & will advise  
me as to its performance -

Stone is at fourth Kensington Exhibitor  
of smoke abatement apparatus  
& I am giving him machine &  
Lamps to work his Gas Engine  
on - This gives me desired opportunity  
see the thing myself - If this  
turns out O.K. I will make large



use these Gas Engines - They  
are single ~~gas~~ Cylinder machines  
& therefore cheaper than the  
Otto - Which gets sterbiness only by  
a double Cylinder with two pistons  
arranged thus



both go in & out  
moving together  
~~not~~ not alternating  
as in a steam  
Engine -

Bergmann must stamp your name  
on Socket 'Edison' - should  
on Everything - This will be very  
much to us in the to our Patent  
fight - I cable today to see to  
it - It would be wise to have  
it on Lamps also if it can  
be done - Yours

A Hydrofluous

Edison

(Form No. 18 B.)

## THE DIRECT U. S. CABLE CO., Limited.

In connection with the Atlantic & Pacific and Franklin Telegraph  
Companies in the United States, and the Dominion Telegraph  
Company in Canada.

16 BROAD STREET, NEW YORK, *Nov 30* 1881

### REGISTRATION OF CABLE ADDRESSES.

*To Thomas A. Mediant Esq.*

DEAR SIR: *65 Fifth Avenue City -*

We beg to inform you that you will  
receive Telegrams by this Company's Cable from

*Mr. H. A. & J. M. M. London*  
under the registered address of

*"Fifth Avenue" New York*  
and in cables to this firm please address your  
telegram to

*"Fifth Avenue" London*

As the above Reversible Register identifies the  
sender, the signature becomes superfluous, and the  
cost of the address is reduced to the rate of two  
words.

Very respectfully,

*Edward*  
Superintendent.

P. S.—In sending messages by the Western Union Tele-  
graph Co.'s line intended for transmission by this Company's  
cables, please address them "206 W. 4th St. N. Y. C." which  
words are signalled free of charge.

THE EDISON ELECTRIC LIGHT SYSTEM.

EDW<sup>d</sup> H. JOHNSON,  
MANAGER.

57. Holborn Viaduct.

London, E.C. Nov 30. 1888

My Dr Edison

I enclose a memorandum of the Faure Batty articles - Copies of which I yesterday sent to you in an enclosure to Major Eaton. I just give you enough of the matter to enable you to identify the article & attach the proper authority to each.

I had a call today from Biggs  
of the "Electrician & Engineer" -  
He is bringing out a 2ndary  
Batt<sup>y</sup> which will do 4 times  
the work of the 1<sup>st</sup> - we shall  
see - He promises to give me  
a view - I go tomorrow on the  
trial trip of the Brighton train  
I am not so it may seem to you  
wasting my time on this Batt<sup>y</sup>, but  
I happen simply to be drawn into  
it - & think it just as well to thus

[ENCLOSURE]

From "La Ville de Paris." 30<sup>th</sup> April, 1881.

"He did not propose to entertain our Readers with an  
"ap<sup>s</sup> of the Accumulators of Mr. Faure, without having  
"seen it at work." &c: &c: &c:

From "L'Electricité". 30<sup>th</sup> April, 1881.

"He arrived at the Lecture Hall of the Société d'En-  
"couragement perfectly willing to accept all that  
"could be accepted, & to uphold all that was capable  
"of being upheld. &c: &c: &c:-

  
EDWARD H. JOHNSON,  
MANAGER.

THE EDISON ELECTRIC LIGHT SYSTEM.

57, Holborn Viaduct.

London, E.C. Dec 7<sup>th</sup> 1881

My Dr Edison

Many thanks for the good long letter at hand today - just in the nick of time to drive home a whole host of nails which having only been entered by me were beginning to stand all awry - I'm not now going to reply to it, or to take up any of the points made - but simply to tell you that it came to hand at a time when it served us all well.

All is going well with us except in point of time it's impossible to move more than just so fast - I'm very much afraid that Father's sailing day will come ere the light is in. *Yours*  
Obediently - *E. N. Johnson*

File

EDWARD H. JOHNSON,  
MANAGER.

THE EDISON ELECTRIC LIGHT SYSTEM.

57, Holborn Viaduct.

London, E.C. Dec 7<sup>th</sup> 1881

My Dear Sir

Big things are on the Carpet -  
& I'm being crowded to death  
Don't expect more of me  
now than simply to say that  
the 22 Page letter of Nov-23<sup>rd</sup>  
came to hand today in time  
to put the screws to some  
half dozen toppling things  
Edison's tardiness in replying  
to letters &c viewed here as of  
the utmost importance - gives an  
impression that he is not much  
interested in this side & hurts  
him greatly - this letter was therefore  
being looked for anxiously &  
its arrival very opportune

Yours in haste

Edward H. Johnson

Pile Light  
G.M.

English Light

15 Lombard Street  
Clubhouse  
London

8 December 1881

My dear Mr Edison

I have had the  
pleasure of seeing Mr  
Fabrie & talked over  
with him the subject  
of your light.  
I have been greatly

interested in your  
remarkable investigation  
& discoveries, & shall  
esteem it an honor  
to be in any way  
associated with you  
therein.

I will with pleasure

consult with Mr. Fabrie  
whom to entrust with  
the working of the  
patents, so that you  
may rest assured  
they will be in good  
hands.

I am dear Mr. Edison

Yours truly

John Lubbock



THE EDISON ELECTRIC LIGHT SYSTEM.

EDW. H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

London, E.C. December 11<sup>th</sup> 1884

My  
Thomas A Edison Esq.  
65, Fifth Avenue,  
New York.

My dear Edison,

Yours of November 28<sup>rd</sup> (22 pages) with  
Supplement of November 24<sup>th</sup> (14 pages) to hand, and  
before replying to any of its details I wish to say  
that its arrival was exceedingly opportune, coming  
as it does while Mr. Fabrie is in the midst of his  
negotiations, it has had a very important influence  
upon the same. The uncertainty with which our  
Patents seem to be hedged about has a tendency  
to make people very timid and negotiations under  
such circumstances involving the payment of a  
comparatively large sum of money, are very difficult.  
The tone of your letter and the comprehensive  
treatment of details combined with the fact that  
you are personally taking sufficient interest in the  
matter to go into such detail has lifted us somewhat  
from the shadow into the light. In regard to these  
negotiations I will go more into detail in a separate  
letter. In this I propose briefly to notice the various  
points mooted in yours and to show you how they

THE EDISON ELECTRIC LIGHT SYSTEM.

EDW<sup>d</sup> H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

London, E.C.

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I have been met and how they will be met.

Delany Cable. All right about this. I will see that Delany supplies you with a sample of his Cable for actual trial and also with prices looking to its adoption by you for your trenches.

Steam Dynamo. You are quite right. I should have left New York two months earlier than I did, but I am not sure that had I done so I would have been so certain of success in a practical way, as I would have been without that experience and knowledge of what we require which I gained during those two months in New York. My present Dynamo is being put rapidly into position and everything will be ready by the close of this week. In fact I expect to start about two days after Mr. Fabrik sails. Every effort has been made to get the thing ready in time for him to see it but it now looks as though that would be impossible. The early arrival of the second Dynamo is exceedingly important. Reports are reaching me from Paris from the boys now arriving from there to the effect that the continued use of the Dynamo has developed some evils of which you of course could not be aware by a few hours of running. For instance

THE EDISON ELECTRIC LIGHT SYSTEM.

EDWARD H. JOHNSON,  
MANAGER.

57, Holborn Viaduct,

London, E.C. 1888

3 I am told that the Insulations in the Commutator extensions become thoroughly carbonised from heating. I take it that this heating is from friction of the bearings and not from the Electric current. If this should prove to be so it of course means that proper precautions have not been taken to prevent heating in the journals. I will look out for that in mine at all events and see that its carbonization is not thus effected. I propose to guarantee myself against serious set backs by doing very light work with the Dynamo pending the arrival of the second. I will leave the foundation for the second all ready long ere its arrival, therefore the lapse of time between the starting up of the first and of the second will be determined solely by you. When it has arrived I propose to run the two taking therefrom only the capacity of one so that in case of the necessity of stopping I can draw upon the remaining one for its full capacity for a brief time and in this way, and this way only, can I hope to secure that which I consider of very great importance namely, "reliability". I am in receipt of a letter this morning from Mr. Porter, about some alterations that are to be made in the Valves and Governor &c of the Engine. If the articles arrive in time of course I will have them put on, but I must not delay starting up

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Book of Instructions. — Have just received one copy of this Book. I have not had much time to examine it but as far as I have been able to look at it am very much pleased with it. Kindly send me a number of <sup>from</sup> Fourth Battery. We have had a row with these people. They wanted additional Dynamite for their Brighton Railway experiments and Mr Tablin gave them to understand that we must see the colour of their money before we furnish them with more material. To this

THE EDISON ELECTRIC LIGHT SYSTEM.

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MANAGER.

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London, E.C. 188

5 They took offence but as is usual with such people they do not get sufficiently on their dignity to pay us what they owe us, so that matters between us are at a standstill for the moment. We will not supply them with more until they have paid for what they have. Whether this results in a disruption or not I cannot say. I have your Cable saying that you can make a Lamp of Extreme Economy and have handed it over to Mr. Fabrie to use with them as a sort of lever to raise them to the plain of Cash dealing.

D. Muirhead. This gentleman was in to see me yesterday and occupied my time for nearly 2 hours in trying to induce me to let him have Lamps and to generally supply him with material and advice in respect to the prosecution of some experiments that he desires to make. He used the fact of his visit to you and your cordial reception as a means to establish confidence with me, but I fortunately had already received your letter and was therefore on my guard and only got rid of him finally by giving him definitely to understand that in my judgment there had already been enough attempts at appropriating Mr. Edison's invention without his leave or license and that I did not purpose being the medium through which the same thing might occur again. I did tell him, however, in response to an Enquiry as to what

THE EDISON ELECTRIC LIGHT SYSTEM.

EDWARD H. JOHNSON,  
MANAGER.

57, Holborn Viaduct,

London, E.C. 188

6 we proposed to sell Lamps for, that if he would make me a proposition for the purchase of 10,000 Lamps, as a square business transaction, I would not only entertain it but would sell him the Lamps giving him the price therefor when I received the proposition. I told him that I would sell him Lamps much better than he could make them and at a price far below that which they would cost him. This question of selling Lamps has been carefully considered by us and we have decided that in cases where large numbers are required, making it worth while for us to give the matter attention, we will sell, but we will not occupy our time or our energies in retail business.

Patents. — I have your several references in regard to the claims of Swan, Pacionotti, and others and Mr Waterhouse will immediately look them up. We have I fancy already seen them all with possibly one exception. I have myself called attention, as you will see when you get the Manuscript of my paper, to the inconsistencies shown in Swan's various papers. You will also see that I had not overlooked as you supposed, the fact that your Platinum Patent was for a process and your subsequent Patent for an improvement on that process, but your subsequent Patent does not make it sufficiently clear that it is simply for an

THE EDISON ELECTRIC LIGHT SYSTEM.

EDWARD H. JOHNSON,  
MANAGER.

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Y<sup>r</sup> improvement. You make your claims too broad. We cannot bring the Patent Experts to the point of rendering an opinion that our claim for a Filament of Carbon of high resistance is good. They say that it is anticipated in detail in so many directions that there remains nothing except the question of degree pure and simple for us to lay hold of. We have already had two decisions on these questions both adverse. I have in both cases commented so effectively upon the argument by which these decisions were reached that they are for a third time being revised and the third decision will be given us, based on the additional light I have thrown on the subject. I have now got hold of Mr. Hanford who Mr. Insull knows, and who is the brains of the firm of J.N. Johnson, and after two hours and a half session with him we have together formulated a new line to work upon. It is this. Supposing that we abandon all else and seek only to make good a claim for a Carbonized Fibre? Hanford is of the opinion that this is the real invention in your Lamp, and he further says that he fails to find anywhere anything which anticipates it, that is to say, that he believes that you can establish your right to the invention of a Carbon made from a Fibre. If this should transpire to be solid I tell our people it will give us practically all we want. My argument is this, that a Carbon

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EDWIN H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

London, E.C.

1888

8 made in any other way, say for instance, of paper and built up by hydro Carbon deposit inevitably leads in the opposite direction to that which we want to go, namely, lower resistance and increased radiating surface, while the other method of producing a Carbon, namely, by taking the natural Fibre, carbonizing it by the best methods known, and subsequently treating it in the best manner to still further increase its refractory properties, as inevitably leads in the direction in which we wish to go, namely, increased resistance and reduced radiating surface. This explanation of the functions of the Carbon confirms the opinion that if we can hold a Carbonized Fibre we have a practical monopoly of the only Lamp which would be of service in a general system. Thus, it would leave our opponents with a Lamp which they could use in their isolated business, but since we cannot hope from present appearances, to absolutely cover the field, it is in my judgment, the correct thing to do to hold that which must ultimately be the only thing of real value, namely, the vital feature of a general system. The two roads along which alone we can march to economy of investment in Conductors and Economy of fuel will be protected by the establishment of this claim unless it shall happen that some as yet unknown process of



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MANAGER.

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Obtaining a similar Carbon by other means than that we now employ, exists. Give me your views on the matter from this standpoint. I had already made large use of the fact that resistance had nothing whatever to do with the question of Economy, but your example renders the matter more clear and adds to the value of my assertions. In respect to Swan's claim for the application of your process to his Carbon Filament, I am confidentially informed by Mr. Harford that it is the opinion of both himself and his principal that Swan's Patent is invalid by virtue of the fact that it constitutes no invention. This is the feature upon which John Henry Johnson has declined to pass for us having already been retained by Swan and it is the thing upon which we received an adverse opinion from Webster Q.C. which opinion, however, as I have already previously informed you, was based upon a wrong understanding and is now being revised. I am confident that we shall be able to show that Swan's Patent on this the only Patent which he has of importance, is wholly bad. Whether we can establish our claim to it is another thing. I am of the impression that we cannot and that the process as applied to Carbon becomes public property. Webster's further decision on this matter will be of interest. In respect to Swan's attempts to

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MANAGER.

57, Holborn Viaduct.

London, E.C. 188

<sup>10</sup> make public property of the various valuable features of the Lamp under cover of his great respectability, I am most decidedly of your opinion and may inform you that I am gradually bringing round others to the same view. In fact Swan's respectability is being impaired.

Lane Fox high resistance. Lane Fox, as a factor in cutting the ground away from your claim to high resistance has disappeared in the shadow of your own publication. You so clearly set forth the value of high resistance in your Platinum Patent (N<sup>o</sup>. 4) as to anticipate yourself in a subsequent Patent (N<sup>o</sup>. 5) so that no claim in the latter Patent for high resistance can be made good if we only had Lane Fox to deal with. His muddiness would save us from "publication". This brings me for the 20<sup>th</sup> time back to the old ground of complaint against you for permitting your Patents to be taken out through the present channel. I am now going to say just what I think, and what is the opinion of others here, and I cannot for your own sake, be too severe. If Upton Clarke or myself were to be guilty of the repetition of so gross a dereliction and carelessness as you yourself are in this matter, we would be chastised by you in terms much more forcible than polite. Our stupidity

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MANAGER.

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would probably result in the loss to you of some time and money. Yours in this matter is causing you the loss of millions and bringing you into disrepute and interminable law suits. Had these Patents been taken out in the manner I advised when here on the Telephone we would today have had an easy road to travel. Your continuance of the old worse than foolish method of filing your English Patents gives the impression that you are careless of English interests. We are today compelled in our negotiations to face the drawback of extreme weakness in our Patents at a cost to you of millions, and yet you continue right along in the same old beaten path. No practical improvement can be made by an oversight only had in New York. You must have someone here who will follow the train of your inventions and allow only to go in in succeeding Patents <sup>that</sup> which will not interfere with existing Patents thereby invalidating both. Had your 80 Patent on the process of heating during exhaustion been filed under such supervision a claim would have been made which would not have interfered with the claim for a process of your Platinum Patent and we could not today have been met by this difficulty, and had your No. 5 Patent for Carbon of high resistance been filed under such supervision we would not have had the

12/ claim so worded as not to have interfered with your claim in your Platinum Patent of high resistance. And again had your Patent for the application of the process not been so religiously restricted to metallic conductors (the word metallic recurring with fatal frequency) but been broadly made for conductors as it would have been by anyone familiar with English Patent Law. We would have again been safe in this respect. In point of fact your Patents are so full of inconsistencies and interferences with each other as to cause their very multiplicity to prove a weakness instead of a strength.

I now ask you for the last time to make a radical change in this respect. Appoint a man who shall be entirely in your own employ to review all your applications for English Patents before filing them here. This is the more important today, because of the fact that you are dealing with improvements in a line in upon which so many others are at work, and upon which you yourself have done so much in an anticipatory way. A complete change of base now will render your future patents good, while the continuance of the present method will still further weaken them.

Siemens. Am I to understand that you hold your bar and plate machine

not to be a Simmon's armature? Barker will tell you that Sir William Thomson pronounced it to be nothing more nor less than a Luciani's armature. I am having this subject thoroughly investigated. I gather that your idea is that Simmon's patent is bad, because not sufficiently described. I am afraid that that will prove to be a difficult position to maintain. He will be able to call hundreds of experts to testify to the contrary. In view of the importance of this matter and of Simmon's possible action pending our negotiations here we have considered it wiser not to hasten the sale or public use of the small Dynamos. Of course the particular use that we are making of the large Dynamo does not give him a chance for an injunction as we are not using it at present for profit. We do not care to do anything to pick an injunction from him at the present moment.

Fabbri, Gouraud. I note what you say in respect to Fabbri's European and Italian propositions and to his ~~own~~ characteristics. There is of course a very good foundation for all you say and I myself have told him that it was my opinion his propositions were not properly understood in New York because not properly argued and presented.

14.  
by his own people who were too quick to  
take offense and too apt to refuse to discuss them.  
I shall receive with pleasure the papers you promise.  
In reference to Howard you will doubtless learn  
on the receipt of this, that this is a bidder for the  
purchase of light as against our old Telephone  
clique. The proposition which he makes and  
the proposition which they make will be found  
side by side before you and I am satisfied  
that you will take the same view that both  
Mr Fabbri and myself take, namely, that we  
cannot afford to accept the Duke's, and  
that our real interests lie with the other people.  
In this whole matter Mr Fabbri has been good  
enough to completely and entirely confide his  
every movement to me. Your assurance  
that in cases where you alone are owner with  
Fabbri and his people, he (Fabbri) will find  
that he has your hearty support, comes at a  
time when it is of great value. Mr Fabbri  
is now able to decide, practically alone, as  
to what is the best thing to be done, in view  
of all the circumstances, and though he will  
undoubtedly submit the various propositions  
to New York and to you, his judgment  
must to a very great extent, be relied upon  
and sustained by you. We cannot hope to

○ get any such large sum of money —  
 "cash down" as we originally expected. Had  
 the patents been, unqualifiedly clear, thus offering  
 some guarantee of a monopoly we, could have  
 obtained almost any amount of money, but  
 as it is, we are compelled to make the trade  
 almost wholly upon a bare hope, in this —  
 respect and upon the commercial advantage  
 of our position. As it is however, a very —  
 considerable sum is offered as advanced —  
 royalties, and a quite sufficient sum is —  
 pledged for making the practical work, in  
 connection with the installation of the thing  
 in England. When you remember that this  
 is done by men of commanding influence  
 and position, you will see, that taking  
 all things into consideration, it is not by  
 any means a bad bargain while if a  
 deal was made with Gouraud, in which a  
 like amount of money, or even a larger  
 amount was paid down, and a public  
 company formed it is just possible we might  
 realize more money in the early stages  
 of the thing, it is absolutely certain that  
 the future would offer no promise of either  
 profit or repute.

Telephone. I will have your exact

position in Telephone matters and inform you. Oriental payments have not been made but are expected in about a fortnight. It is common rumour here that this concern is exceedingly rotten, and my opinion is that there will soon be some burst bubbles, and this opinion grows stronger as I learn more of the facts.

**Sockets.** I submit to all you say in this respect, and will do as you suggest. The lamps that I have, I take it, will not be useful with the new sockets. I shall therefore use them with the old keeping the old sockets in use in my demonstration plants, and selling to the public only the new sockets. This implies of course that I must have a supply of lamps suited to them. What have you thought about this?

**Lamps.** I am glad you have given this matter your attention. Of course I have had no opportunity yet of testing the life of the lamps I have, but am afraid from what I learn from Paris and New York that they are all the 400 hour article. This of course will make my Crystal Palace demonstration unfortunate, as I propose to shew about 800 or 1000 lamps there, and to continue the show



for several months, lighting for several hours each day. The percentage of breakage will therefore be very great, and that right in the eye of the public. I think I should be provided with some remedy for this. Of course I will call attention to the fact, that the life of the lamp, is the average life, and that a single lamp does not determine it. Your opinion that you can give us a 12 per. C.K.P. lamp of 250 Ohms with a life of 600 hours comes very opportunely, as it enabled us to drive home a wedge which I had already entered in respect to the cost of electricity as compared with gas. Our trade is based upon our ability to show that we can compete commercially with gas. I was making the point that even if we could not do so today, we certainly could tomorrow for the reason that the investment and fuel consumption would be reduced tomorrow. I fully explained the bearings of your prediction, as to the 250 Ohm lamp and the 12 per C.K.P., and it had a very material effect.

I have heard nothing more of Crooks.

Crystal Palace. Am glad that you confirm

my plan of working my Dynamo at  
 Crystal Palace and trust that you will have  
 sent the Regulator long before this reaches you.  
 As you will have learned from later letters I  
 have modified my plan so as to render it  
 unnecessary in <sup>case of accident to stop</sup> ~~the~~ <sup>it</sup> ~~of stopping~~ more than two  
 Dynamos at one time and have adopted  
 the friction clutches suggested in Clark's sketch.  
 Clark's plan by the way is wholly impracticable  
 and beside, the counter-shafting and pulleys  
 to put <sup>it</sup> into practical operation, would cost about  
 £500, while the plan which I have adopted  
 will cost less than £200. The information  
 you give as to the superiority of my Dynamo  
 over those sent to Paris came just in time.

I had sent a Dynamo to Sir William Thomson  
~~who~~ <sup>who</sup> having tested it reported to ~~him~~ <sup>me</sup> that  
 its performance was very much in excess  
 (and more satisfactory generally) of my  
 representations. I immediately wrote to him  
 giving him an extract from your letter. He  
 is highly delighted with the machine and  
 is "surprised at the great disproportion of  
 resistance of your armature and field circuits.  
 I am delighted that the magnets do not get hot

19.  
and that so little heat is developed in the armatures, and further that the brushes give so little trouble. The adjustable brush holder is something very much needed and I am glad it is coming in time for my <sup>Crystal Palace</sup> ~~my~~ plant.

Belts. I will use only belts of 6 inches width preferring a little criticism in this direction to a possible failure of demonstrating the reliability. My plan of operating this Crystal Palace plant has been freely and fully discussed with my London Engineering Contractors, with Hood and Holloway and with Peabody's - the people who are supplying me with the Engines, and they endorse it from an engineering point of view, as thoroughly practical and simple. I am glad indeed that you endorse it electrically. It gives me confidence in myself in a direction in which I have had so little experience. I note what you say about the Dynamos not forming low resistance arcs, in cases of the stoppage of an Engine but continue as Motors, and thus driving the Engine, and as such Motors establishing a contrary electro motor force which protects them as

would an equivalent resistance. This I <sup>quite</sup> understood but my question was put <sup>in</sup> the view of a stoppage of the Engine by reason of its breakdown, or in other words its inability to move at all. This you will see would bring the armatures to a stand still in which case I take it for granted, that the low resistance of the axis, they would thus establish, would insure their destruction. I shall therefore make provision for the prompt opening of their general circuits one at a time ordinarily and the four collectively in case of extreme necessity. With the slow moving Engine however the chances of any such necessity are very remote. The only thing I shall have to guard particularly against is the breaking down of a Dynamo, and that will involve according to my present plan only the stoppage of two Dynamos which I will do by my friction pulleys. I can open the circuits of these two Dynamos instantly without putting too much strain upon the belts of the other ten and therefore I feel I have a large margin of security, no matter what may happen. I do not like

the plan of unhooking the Dynamos in order to loosen the belt, and thus effect its stoppage. In a compact mass of Dynamos and so many belts it strikes me that it is not a wise thing to risk the sudden release of a belt travelling at such a high speed. It is too liable to fly round and do general mischief. I much prefer the friction <sup>method</sup> clutch. I follow you perfectly in respect to the resistance and radiating surface required in a regulator for my twelve machines. I see that the increase of surface and reduction of resistance is not necessarily in direct proportion to the increase of the current passing through the regulator. Of course pending the arrival of the regulator which Clark will calculate and Bergmann make, I shall use a sufficient number of my resistances in multiple arc to obtain the required result. I quite understand that with twelve machines multiple arced any change of resistance in the regulator is vastly more effective than it would be upon a single machine. I will try the experiment of putting a switch in my fields, so that I may open them, also in case of a stoppage of four machines as the

② remaining eight will have all they can do, to supply the requests current for my six hundred lamps, without waiting <sup>even</sup> so little of the energy as these four dead fields would require; the only effect the opening of these fields would have upon the regulator would be to make it necessary in regulating, to move the handle over more notches. It is impossible for me to make a photograph of the large-machine. It is not put together of course in position in the cellar of my building where the space is so contracted that it would be impossible to get a decent photograph of it. I wish you would have a large photograph such as you suggest, made of the second-machine while it is together in your shop, and send me a dozen ~~also~~ or so. I want them for Crystal Palace.

Small Engines. There are no high speed engines in England, and slow moving engines require such expensive gear in counter-shafting and so forth, that I am quite of opinion that it would be much cheaper for us to bring engines from America than to buy them here. It is therefore exceedingly probable that I may

23.  
Send you an order for quite a number of these engines, and am glad in view of this probability that you are going to — manufacture them in your own shop. In this connection I am giving considerable attention to Gas Engines and as soon as I obtain one which will yield satisfactory results in every respect, I shall have one sent to you. I have also arranged with the makers of the Engine which promises the best results, for the control of the Patents for the United States. They will be placed at your disposal before being offered to anybody else. I consider this very important for the isolated business for the reason that so few places offer sufficient accommodation for steam Engines while in all there can be found the requisite accommodation for Gas Engines, besides which there is a question of attendance, labour, dirt and so forth.

Steam Dynamo Engines. This transfer of current to main conductors is one that gives me the greatest uneasiness. Hammer feels confident of his ability to manipulate the mercury business as satisfactorily as

24.  
was done in your shop. I cannot —  
honestly say that I share in his confidence,  
However you can rest assured that I  
will apply all the intelligence of the entire  
establishment to this feature.

Safety Catch. I have put in practice  
in London what I only did in theory  
in New York, namely, inserted a safety  
catch at every branch no matter how —  
insignificant. I firmly believe this to  
be a requisite and propose to make the  
most of it even at some additional —  
expense. My building is wired & manded  
and safety caught in accordance with  
the theory. I have had my Article —  
(written for the New York Board of Fire  
Underwriters) put into print in pamphlet  
form and have already made very good  
use of it. On one wall of my show  
room I have on brackets a complete  
system of wire distribution, including  
feeders from the Central Station; gradual  
diminution of <sup>size of</sup> conductors &c &c; the —  
conductors being naked wires fastened  
on to brackets. In this system I  
propose to show the operation of the —



o 25

safety catch as well as many other things by loading up a branch circuit with Lamps until the safety catch gives way and then load up one in which there is no safety catch until the wires become hot. I have given the thing a new name. I call it the "Protector" since its function is protection pure and simple. It protects the light of other circuits. It protects the wires and insulation of not only its own but other circuits. It protects the Dynamos; it protects property from fire. In fact its only function is to protect the system. What do you think of the name? Electro Motive Force Indicator. This is a happy idea and I will say nothing about it until you are secured. I should like to have one as soon as possible. I think, however, you should allow more variation than a single volt otherwise I am afraid it would be voted as a nuisance and, by the way, why not carry the idea further so as to show the falling of pressure as well as an increase, or, do you think it sufficient to rely upon the Lamps themselves to do this.

Prece. All your questions in regard to this man have been answered before. I am of the opinion that his position in the Telephone matter was at first a mistake then maintained by virtue of your trade and then maintained by reason of the position assumed by the Government. His lecture comes off the 11<sup>th</sup> of this month at the Society of Arts. I

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am to assist him and his lecture is to be illustrated "by that system of Electric light which in my judgment is most complete and offers the surest solution of the problem of general Electric lighting". Its value to us will be very great and we propose to recognise it in a practical way in the formation of our Company. You are likely, therefore, to be brought into close relations with Preece in the future.

Amalgamation. Mr. Lowry having left there shows this subject has hardly longer of sufficient interest to form the staple of conversation let alone serious discussion. I think we may therefore dismiss it at least for the present. The money requisite to make an installation such as you are making in New York is already offered us beside £50,000 for yourself. We therefore need not consider it from that point of view. If considered at all it will be by the new owners and can then only be done by your sanction.

Cost. Your remarks as to the relative cost as compared with Gas in view of the decreased <sup>gas</sup> output came in very happily. We had just telegraphed you on this subject and are even now waiting your cable reply. This is the one thing that we failed to bring with us. I supposed of course that Mr. Fabiani had provided himself with all the requisite figures. I have already recommended that the man to whom you allude be looked up

and set to work at making the requisite calculations to show the ratio of increase of cost to decrease of output. I am however of the opinion that this ratio will be more apparent than real for the reason that gas consumption here, for the purpose of producing heat and power is so largely on the increase that more gas will actually be made despite all our lighting in the future than in the past. There is this to be said however that as the application of the gas is diverted from the production of light to the production of heat and power its quality will be reduced and therefore it will be even more obnoxious as an illuminant than it now is; thus what we may lose in one direction we will gain in another. These are ideas however which have occurred to me alone; they have not been broached by others and I of course will not volunteer them. If however they will be adduced by others as an argument against the adoption of your views I will then meet them as I have here suggested.

Disclaimers. You are quite right in assuming that many of the Patents will have to be subjected to the process of disclaimer - in fact about 90 per cent will have to be disclaimed. That is what is going to occupy more of my time in the future than all else. We are now giving attention to the very things that you speak of in your letter. As for the patent for a system as a whole we have not carefully gone into this yet, but I am of the opinion that it is wholly inadmissible. Too severe restrictions are imposed by the English Patent Law of combinations to render it possible to secure so extensive a combination as this.

Double Steam Dynamo. This a brilliant suggestion and I think it very likely that if anything comes of the Aurora battery matter, I will be able to send you an order for the construction of one of these. These people are organizing a Company with a large capital. If they succeed and are prepared to offer sufficient security to make good a contract

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○ I will conduct a negotiation with them for one or more of these large dynamos. I am myself of the opinion however, that it will be many a long day before they will have any practical use for such an extensive plant. The batteries weigh too much, to become portable and I do not fancy they will have any considerable number of them located within the limits of the distributing power of a large central dynamo. In view of all these things I do not think you need look forward to any immediate negotiation with these people for railways or any other sort of purpose. Biggs of the "Electrician" and "Engineer" tells me that he and some associates are bringing out a battery which shall have a capacity many times greater than that of Thure. We will wait and see. I am able to satisfy everybody except of course those directly interested in this accumulator themselves that it is not only not essential in a general system of lighting but would involve a serious backward step from a commercial point of view.

• My statement. I have not as yet sent you this as promised for the reason that I have had to have it recopied. Mr Waterhouse has since put it in print. I therefore can now send you a printed copy as far as it has gone. This I do by this mail.

Chalks for Telephones: Please send me some chalks for motograph Telephones both speaking and belchers. Katchelor used all he had at Paris.

Gas Fixture attachments: These have just arrived, therefore my Comundrons in respect to them are all answered. They are a little late but I can make use of them.

The Times: I have not been near these people since I first came to London. I have felt a sort of estrangement because of the character of the articles written by their Paris correspondent and because of the fact that they had already thrown light in use before I came. I understand this man Forbes who wrote the Paris articles has now been appointed general manager of one of the Electric Light Companies here - I forget which - The tone of such articles as do appear from time to time is somewhat changed and I think that the true policy is to leave the newspapers completely alone until I am ready to make my demonstration. On the

° Opening night I propose to invite the Press and give them a supper where I will make a brief speech setting forth what our system contemplates and its present degree of perfection. I think I can do this in a way that will render it perfectly clear and give them sufficient material for good articles without causing them to exercise much thought themselves and at the same time by giving it to them in the form of a brief address avoiding the ugly appearance of a cut and dried article prepared in advance and furnished to them in slips.

Manchester Corporation, Gas. It seems this Corporation is an unusually progressive and wide-awake one. They appointed a Committee to attend the Paris Exhibition and to report. That Committee has so reported. They called on me on their way from Paris home but I was not in. Learning of the fact however, I wrote them a very exhaustive letter and informed them that on the occasion of my opening here in London I would invite them and requested that they would pay me a visit and examine Edison's System in more practical operation than was possible to show at the Electrical Exhibition at Paris. To this I have received

o a reply thanking me very cordially for my letter expressing themselves as highly pleased with what they saw at Paris and indulging in the prophecy that what I would show them in London would confirm practically the opinions they formed in Paris and assuring me that on the receipt of my invitation they would most certainly come to London and thoroughly investigate the system. Mr. Waterhouse is informed by his cousin (Mr. Crewdson Waterhouse of Manchester) whom you already know by reputation, that the Manchester Corporation means business, that they are determined to be among the first to apply Electric light on a large scale so soon as the means to do so shall have been provided. Mr. C. Waterhouse is of the opinion that our first installation in England of a large plant will be made under the auspices of this Manchester Corporation. This may transpire to be a very happy method of introducing your light in a practical way, under the auspices of men familiar with the requirements of the public in respect to light and who have evinced by the thorough manner in which the Gas department of their Corporation is managed that they



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possess business qualifications of a high class. What do you think of the Edison Electric light being introduced and put into operation by a Gas Company?

Very Truly Yours  
Edw. R. Johnson

THE EDISON ELECTRIC LIGHT SYSTEM.

EDWIN H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

London, E.C. Dec. 15<sup>th</sup> 1881

Thomas A. Edison Esq

65, Fifth Avenue

New York

My dear Edison,

As you will see by the papers sent you and by the proceedings of the Society in their Journal the Edison Light made a successful debut in London last night. We had a crowded house and the lights were very steady and very uniform. I showed all the various devices many of them in practical operation and their performance was well received. Preece was attacked by Sir Henry Tylor, Crompton, and Selin of Johnson Matthey & Co, all interested in other lights, for his partiality to you. Of course this was to be expected and he took it very good naturedly, pointing out that although his notes extended to about 14 pages, only two of those pages had reference to the Edison light. It was evident, however, (he remarked) that what he had said about the Edison light, had made a deep impression upon the minds of all present. My own impression is that the completeness of

2 Your system is going to be recognized and appreciated by the public who will compare it to its advantage with the extraordinary credulities put out by people here. You will notice by another Extract I send you that the British Light has killed another man, an Employe of the Marquis of Salisbury. I immediately sent him a copy of my pamphlet on "Safeguards against Fire". At 2 o'clock yesterday afternoon I went to the Societies rooms and found Hammer and Holloway with their gangs of men in the midst of great confusion and standing over the Dynamo in utter helplessness not being able to get a particle of current out of the machine. After taking in the situation I pulled off my coat, went to work and finally discovered that one side of the field magnet was broken, connected up the other side alone throwing the broken one out entirely; then working with one leg. I then found that I got a good current and connecting on my mains started in ~~and~~ for a test of the circuit and fortunately took the precaution to close the Dynamo with a piece of small wire which went off into vapours like a flash of lightning. On going to the other end of the cable, 120 yards distant,

and opening it I found the cross was eliminated. I then put the current on the mains and went to the Hall myself to test. This was no small job as the wires were all connected together in the centre and ~~had~~<sup>it was</sup> drawn up to the ceiling, the various circuits dipping down to the corners of the room. I had to have the whole thing lowered in order to get at this centre to test for the cross and after an hour's hard work succeeding in finding it in one of the circuits and that it was in the sockets evidently made by the boys who wired them. It not being practical to put in safety catches at this centre piece they were omitted otherwise the breaking of the safety catch would have notified me at once on which circuit the trouble was.

Another hour sufficed to get the things all straight but I was afraid to load the machine up heavily as I did not know how it would stand the strain or whether it would do sufficient work to enable me to make the considerable variations in the incandescence which I wanted for the purpose of illustration. I had, however, 40 lamps on brackets, Chandeliers, in ~~lamps~~<sup>festoons</sup>, portable lamps to pass round the room with a long cord and the looped circuits from the centre.

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The whole was more than sufficient to brilliantly light the room. The Engine was a Robey portable Engine on wheels made for Agricultural purposes and borrowed from the Agricultural Hall. It kept the lights wonderfully uniform scarcely a pulsation being perceptible throughout the whole of the evening. I turned off a single Lamp, showed your turn down Lamp, switched off a Chandelier then restoring everything switched the whole off leaving the House in utter darkness and then suddenly switching all on again. These various illustrations were well received. The hand lamp was passed round the entire audience everybody taking it and examining it with great interest and curiosity. No mishap of any kind occurred, at least none that was visible to the audience. There was this, however, since I only had 15 Ohms resistance on my magnets my resistance box was insufficient and it became heated to such a degree that the insulation melted and ran out of the edge of the box like water. Just as the audience were dispersing the box began to smoke when I opened it and short circuited the regulator thus bringing the lights up to extreme brilliancy for a few moments and probably, though I was not there, heating the wire on the magnet. Of course you will understand that ~~the~~ ~~wire~~ ~~was~~

5 brought the field wires from the machine to the ~~new~~ Hall in order to be able to control the light in the presence of the audience. There were present Mr. & Mrs. Tabbari, Coll & Mrs. Couraud, Mr. Waterhouse, Arnold White, Mr. & Mrs. Edwin Waterhouse and several other minor associates and attaches of the Edison interest. (Enc. Mrs. Whinn)

I am today in receipt of several applications for the immediate installation of the Edison light. This presages a storm of such applications when I shall have the Viaduct exhibition in full blaze. Tabbari who goes out with this letter will tell you all about it.

A few words in respect to the negotiation Mr. Tabbari has been conducting here. Taking all things into consideration it is in my opinion the best that can be done. With the one exception of the advanced Proportions I do not like either the amount or the contingency and its payment, I am not however

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of the opinion that a larger amount is possible and as to the contingency upon which the payment is based I feel that you will be able to early anticipate it by helping me show no greater cost than £40. Your Cable today about 280 ohms lamp is in the right direction. The Company will be one of the strangest in England and the shares are certain to go to a handsome figure. I like the idea of shares too represent the half profits as they are a marketable commodity and forestall all possible disputes in the future as to what profits consist in. If you will give the matter very careful attention and weigh all sides of the question as they will be presented by Mr. Fabbri I think you will be able to see that he has done the wisest and therefore the best thing that could be done with the Light to secure for it a commanding position at once and an

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abundance of capital to put it into practical operation out of hand. Since no Manufactory will be attempted here it follows that Lamps and Dynamos must come from America. This means work for the Lamp Factory, work for Essex Street and work for Bergmann & Co. In the hands of the men who are taking control no manufactory is likely to be started here for a long time to come. This is an important consideration. In the hands of the other party the large works lately taken by the Construction Company would undoubtedly be employed in the manufacture of the various things required. I will not say more on this subject as Mr Fabbri will only repeat all that I could say. He has taken me into his confidence entirely, and I have known of every movement and have discussed with him very fully every point as it arose. He has shown his confidence in me today further by introducing me at J. P. Morgan and there and then gave me a carte blanche to draw upon Drexel Morgan & Co for all the money that I may require and without stint to carry out to a successful issue the two expensive and extensive demonstrations



I am now making in London. His manner of doing this was very handsome. no restriction whatever being imposed. In point of fact he said that if in the judgment of J. S. Morgan & Co my drafts seemed to be unwarrantably heavy they should give me the benefit of their doubts and cash them without dispute. Of course I shall be my business to see in view of this liberal way of dealing that they get their money's worth. He has also turned over to me Norway and Sweden in order that I may try my hand at financing. I shall try and give a good account of my stewardship Steam Dynamos. Hod tells me that my Dynamos gave more trouble in heating in the journals than the Paris machine. He is evidently very nervous about it and speaks quite confidently of having a great deal of trouble. This is rather discouraging in view of the fact that I have got to run from 4 o'clock in the afternoon till sunrise the next morning keeping upwards of 600 or 700 lights until 10 P.M. and 250 thereafter. In order to work this trouble out as far as possible I propose to run a

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Dynamite a week, before I open up to the public giving it no work except the illumination of my office. Since Mr. Tabbie had to leave before I got into operation I am no longer in such a great hurry and shall therefore take my time to do it. If I find that it will not be safe to rely upon it for more than 2 or 3 hours consecutive running I shall not start it at all until the arrival of the second. Please therefore push that machine forward as rapidly as possible. In respect to this in what will it differ from the one ~~you~~ now have. I want to prepare the foundations and should know the size of base position of bolt-holes &c. Can you not forward these to me a few days in advance of the machine as I would like to be all ready for it ere it arrives especially if I should be unable to start with the present one with any degree of safety. Hood does not seem to think that the suggestions of Porter are of any value; he says that most of them were carried out at Epworth Street and does not believe that any slight alteration will improve the smoothness of work of the machine

Very Truly Yours

Edw. H. Johnson

COPY.

London, 16th December 1881.

Dear Sir:

Mr. Edison's Electric Light.

As promised yesterday I beg to report to you on your leaving for America upon the progress so far made <sup>with</sup> of the various branches of the work which I have had the pleasure of conducting for you during the last few weeks.

First as to the Patents. Under Mr. Preece's advice the preliminary investigation of these was placed in the hands of Mr. S. Bidwell-- a Barrister whose scientific attainments peculiarly fit him for the task which is one of no small responsibility. Mr. Bidwell has already reported on the claims for the lamp, and is now engaged on those for the other portions of the Edison system. His report on the lamp claims was placed before Mr. John Henry Johnson, the Patent Agent, and the latter has confirmed the conclusion that the patent of November 10th 1879 is the one on which as to this part of the system we must mainly if not exclusively rest. The inquiry <sup>as</sup> revealed much in the framing of the patents which we cannot but regret

as weakening the position which Mr. Edison's undoubted discoveries ought to have given him. Mr. John Henry Johnson hopes however that we may be able by disclaimer to strengthen that position, and I assume that we have your authority to take such steps in this direction as may seem expedient after due consideration. We shall ask under the advice of Mr. Webster, Q.C.

Who is the ablest patent lawyer at the English Bar, and I look forward-- most valuable assistance in this matter from the intimate knowledge of the subject possessed by Mr. E. H. Johnson, in whose judgment I have great confidence. We must make the utmost possible use of his help during his present stay in this country.

I greatly hope that the patents which relate to other parts of Mr. Edison's system may supply claims sufficiently clear to protect some of its more important details. It will be a great disappointment if we find (as Mr. Bidwell fears is the case) that there is no patent for the device by which Mr. Edison protects his system from the risk of fire. You may rely on everything being done that scientific and legal skill can do to ascertain exactly how we stand in this and other points,

and to strengthen the claims which prove to be novel and well founded by disclaiming such portions of the patents as may expose these claims to danger. You may also rely on my using my best endeavors to keep the expense of this inquiry and the consequent proceedings within the most moderate limits possible, but I should be misleading you if I represented the work as likely very soon to be completed, or as not likely to involve a considerable outlay.

Secondly as to Parliamentary powers.

At Mr. Lowrey's instance during your absence on the Continent we took the needful steps since approved by you for an application to Parliament next Session for powers to supply Mr. Edison's light in cases where to do this involves taking up streets etc. The wisdom not to say necessity of this step was evidenced immediately afterwards by the fact that all the other electric light companies were applying for similar powers. I cannot say that I am very sanguine that Parliament will give us the bill we are about to deposit just as it is drawn, but it is clear that the whole subject must be dealt with, and it is

Probable that all the bills of the various rival companies will be referred to a Select Committee. If this course is taken, it would seem essential in your interest that Mr Edison's system should be one of those considered, and that it should be brought before Parliament as one fully developed and ready for immediate introduction. No better evidence of confidence on this point can well be given than by an application for the powers in question. The expense here again will not be small (few private bills if they encounter any opposition are ever obtained for less than 1000 pounds and they often cost very much more) but having regard to the magnitude of the interest involved, I believe that all persons competent to form an opinion would say that the application is not only prudent but necessary. I hope to have a final revise of the bill ready for you before you leave, and shall assume unless you otherwise instruct me that you desire all needful steps taken to place <sup>it</sup> before Parliament with the best possible chances of success.

Thirdly as to the proposed Company.

I need hardly recapitulate here what has been done towards forming a strong organization with ample capital for

the acquisition of Mr. Edison's patent rights in this country, and working those rights energetically for the common benefit of Mr. Edison and the capitalists concerned. When you gave me instructions to take preliminary steps in this direction, I felt that there was no one in England so likely to ensure <sup>the</sup> success of such an organization, and so likely to be personally acceptable to Mr. Edison as Sir John Lubbock. That gentleman is not only well liked in Parliament as member for the University of London, and in the City as the head of one of the leading London Banks, but he is equally distinguished in the world of science. He is a fellow of the Royal Society and last Summer was President of the British Association for the advancement of science at its Jubilee Anniversary.

I thought it for these reasons expedient to approach him in the first instance, and after my explanation of what you had in view, he at once expressed his readiness to take an interest in and devote some of his time to the organization of the proposed company, though his other engagements may prevent his accepting a seat upon its Board. At his suggestion I next went to Mr. Bouverie, a gentleman of the very highest business

standing and experience, of broad and liberal views, formerly Vice President of the Board of Trade, already known to Mr. Edison, and who has a very great admiration for Mr. Edison's genius.

Mr. Bouverie has entered into the matter with zest, and I already have reason to hope that his name and Sir John Lubbock's will render it a comparatively easy task to secure the others we desire in order to form a company as satisfactory in the standing of its shareholders as in the character of the work which it will be formed to carry on. I attach great importance to these names for this among other reasons; that the development of Mr. Edison's system must depend mainly on the rapidity with which local companies are formed for lighting the separate towns.

As to the merits of the different systems the mass of the community will for some little time be unable for want of experience to judge— but the character and standing of these gentlemen are known to the whole country, and furnish a *prima facie* recommendation in favor of Mr. Edison's system, which will be of the highest value when you come to form your local companies. I say this without at all ignoring the enormous and growing reputation which Mr. Edison himself so deservedly has.



The agreement for the proposed company which you take out with you to lay before Mr. Edison and your colleagues in New York, meets I understand with your own cordial approval. I was wishful as you are aware, that that agreement had been settled on your behalf by an entirely independent solicitor, but it has been laid before a separate Counsel with instructions to consider it in Mr. Edison's interest and has been approved by him. I can well believe that in some of its details it may seem to fall short of the expectations previously formed of what should be at once possible in this country, but I may perhaps point out that these expectations were probably formed on an estimate of the immense importance of the invention rather than any accurate knowledge of the extent to which that invention could be handed over as a monopoly to enterprising capitalists. The scheme however of the agreement is one which will I believe work perfect justice to Mr. Edison's interest, securing to him as it does one half of all the profits which may be earned by the company, however long its continuance after payment of five per cent. on its actual capital, and one half of all surplus after repayment of that capital in the event of a liquidation or dissolution. This share of

profits is represented by B. shares fully paid up and which will be equal in amount to the capital from time to time paid up on the A shares.

Mr. Edison and his partners will thus receive in respect of the patents immediately after the company is formed (in addition to the cash payment) 100,000 pounds in fully paid up shares, ranking for dividend equally with the A shares after paying five per cent. on the latter, and each successive increase in the paid up capital of the company will give him a corresponding addition to this holding.

The agreement contains a clause providing that the company shall be entitled under these conditions to any future patents relating to the light which Mr. Edison may take out. This was the provision in the case of the telephone agreement, and will I trust commend itself to Mr. Edison's judgment here also, as being the arrangement<sup>n</sup> most likely to conduce to his own interest as well as to that of his fellow share-holders.

It is a most impossible to place a price which shall be anything like the real value on a new and untried patent. But it would

seem the best arrangement to entrust such a patent to the hands most likely to work it efficiently and where a substantial share of the profits made will go to the patentee.

The gentlemen to whom the agreement as now in your hands has been submitted, and who are ready to subscribe 5000 pounds apiece towards the formation of the company, proposed on the lines defined by that agreement, have been informed that though satisfactory to you, it is not to be taken as finally approved in its details until I hear from you after your return to New York. The future shareholders will all desire that those details should be acceptable, not only to your partners but especially to Mr Edison, with whom they look forward if the matter proceeds to a connection which shall be both close and cordial; but I ought perhaps to beg you to bear in mind that those details have not been hastily arrived at here. They have been the subject of many conferences and much deliberation, and though all the intending shareholders are ready to accept the proposal as it now stands I cannot answer for their readiness to adopt any changes.

Were we in a position to say more about the patents' the case would of course be different. All we can at present promise is that if the proposed arrangement is carried out the patent shall be defended by all that skill and money in this country can do. I presume you think there is a sufficient probability of the agreement being accepted under your recommendation to justify my laying it provisionally before other gentlemen of position and business ability pending your expected letter. I am particularly anxious among others to see Mr W.H.Smith, the late first Lord of the Admiralty, to whom Sir John Lubbock has written, and who is expected back in this country on Thursday next. Perhaps you will let me have a line on this point.

In conclusion I have only to express to you the very great gratification it has been to me to be honored with your confidence in this business, and to be connected in however a remote a degree with Mr Edison's great invention. I have personally a very strong opinion of the expediency of forming a company at once under the agreement which you take out with you, but whether or no this is carried through I shall always look

back with pleasure on the work of the last few weeks.

I am, my dear Sir,

Yours very faithfully,

(Sd.)

Theodore Waterhouse.

To:

Egisto P. Fabbri Esq.

Grand Hotel,

Charing Cross.

Dracel, Morgan & Co

P.O. Box 3036.

New York Dec. 19<sup>th</sup> 1881.

Dear Mr. Goddard,

Mr. Maught wants to  
get all the Edison patents together  
in which D. MTCs are interested,  
and I send this by Mr. N.  
Hoyd, Jr., of our Bond Department  
who has a list of all the  
payments made by us for  
such patents; and of patents  
delivered Bond. Please send  
him such patents as Mr.  
Edison now has charge of,  
with a statement of the  
circumstances of those which

neither he nor we have charge  
of.

Very truly yours

C. H. Christman

C. Goddard, Esq.

Mr. Hoyd's receipt for  
whatever deliver him, is  
valid.

CSC

Invoice

6 Lombard Street, E.C.

London. 20<sup>th</sup> Dec. 1881.

Dear Mr Inoué,

I thank you very much for your letter of the 5<sup>th</sup> inst. I wrote you a few days ago giving a ~~re~~ 'résumé' of the course of events till that time, and up to the present affairs have not assumed any different aspect. I am glad to hear that Mr Edison has made such headway in his Dynamo and Lamp factories, though it is hardly the thing to have such a large stock in excess of the demand. I have no doubt however that as you say the position will soon be different.

Johnson has not yet given us an illumination except the comparatively private one to the Society of Arts on the occasion of Mr Preece's lecture. I don't think I mentioned this to you in my last. I wrote Mr Edison concerning it however, and I have no doubt you

will have seen the reports in our London papers, which Mr Johnson will have sent you. Some of the Members of the Society - notably Sir W. Dyler seemed very much annoyed that the Edison system should have received so much notice and expressed themselves to this effect. Preece however remarked that ~~they~~ <sup>they</sup> had been before brought before the public, and that ~~they~~ <sup>they</sup> considered Edison's possessed advantages which the others could not ~~possess~~ boast of. His amende was most complete, and I should think would make a very good impression on the public generally.

Yours faithfully  
J. F. Johnson

65 Fifth Avenue.  
New York.

Copy letter from } 65-5-A.R. New York  
dated 109 etc } Dec. 20, 1891

E. H. Johnson Esq.

57 Holston Viaduct

Lebanon, E. C.

Englewood

Dear Sir

I beg to confirm <sup>rough</sup> estimate of  
costs as follows

Total have accurate general basis shown  
cost not exceeding gas cost, proper material  
with figures including complete showing  
main reliance commercial, business and  
in accurate data.

I give him very rough estimate  
of cost of central station for your personal  
use.

Central Station of one square mile \$3000  
in candle fuel.

#### Investment

|  |       |
|--|-------|
| Engines @ 1000. 200 h.p. each price to 200 | 40000 |
| Boilers @ 2 per L.C. say                   | 28000 |
| Stacks                                     | 10000 |
| Spring foundations, boiler, & Eng. cost    | 8000  |
| Steel structure erected                    | 8000  |
| Apparatus                                  | 3000  |
| Site cost of floor                         | 3000  |
| Station regulation apparatus               |       |



|                                  |           |
|----------------------------------|-----------|
| Mills                            | 10,000    |
| Exciting appliances firing Mills | 10,000    |
| Racks and feeders                | 200,000   |
| Total Investment                 | \$370,000 |

|                           |          |
|---------------------------|----------|
| Running expenses one year |          |
| Labor                     | 12,000   |
| Coal Mills                | 1,000    |
| Coal                      | 16,000   |
| Oil waste                 | 2,500    |
| Oil                       | 12,000   |
| Executive                 | 6,000    |
| Lamps                     | 17,500   |
| Depreciation              | 8,000    |
| Mills Nov                 | 11,000   |
| Taxes                     | 3,000    |
| Water                     | 2,000    |
| Total                     | \$86,300 |

33,000 lamps 3 hours daily 300 days  
 3 ft per hour is 148,500,000 ft at 85°  
 per hr. = \$126,220 Gross receipt  
 Expenses 86,300 - Net profit \$37,920

or over 10 per cent on investment  
 Sold at 1/4 per lb. would equal \$148,500  
 giving profit of \$62,200 or over 16 per cent

This will give you a rough idea of  
 cost and profit but it is impossible to  
 estimate exactly when you knowlege of  
 conditions on the other side are so slight

Yours truly  
 Thos Edison

P.S. Following please find copy of  
cable - sent you in reply to one mailed  
above.

Effingham London (sent Dec 15/81)

Can only give very rough estimate of future  
Investment in good positions London for  
every thousand feet equivalent said to  
be from two dollars seventy five cents to  
two dollars ninety cents and will pay  
little more than eleven percent on whole  
of actual investment taking a low  
candle electric to equal ordinary five  
foot London burner. Have been  
working at Men's two weeks getting  
high resistance lamps to admit  
competition London Gas have got ten  
candle lamps two humane eight hours  
will make detailed estimates

Yours &c  
Effingham

Effingham  
C. S. 1881  
30.

EDWIN H. JOHNSON,  
MANAGER

THE EDISON ELECTRIC LIGHT SYSTEM.

57, Holborn Viaduct.

London, E.C. Dec 23<sup>rd</sup> 1881.

My dear Edison,

I have lost that memorandum that you gave me about the purchase of that Patent on the Arc Light, I cannot imagine what can have become of it. Will you repeat it to me and at the same time say what you would advise now being done.

Very truly Yours,

E. H. Johnson

Now about the "Arc" anyway you have never told me whether it's going to amount to anything

E. H.

|   |    |   |   |               |
|---|----|---|---|---------------|
| 2 | h  | 4 | 2 | English Light |
| 7 | h  | 2 | x | Dec. 2387     |
| 6 | 24 | 8 | 4 | W. C. L.      |
| 2 | 1  | x | 4 | W. C. L.      |

Encl<sup>o</sup>

THE EDISON ELECTRIC LIGHT SYSTEM.

EDW<sup>d</sup> H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

London, E.C. Dec<sup>r</sup>. 28<sup>th</sup> 1881.

Thomas. A. Edison Esq<sup>r</sup>.

65. Fifth Avenue,

New York

My dear Edison

I, herewith, Enclose the first proof of my writings on your Electric Light System. You will see that I have only got as far as the first division of the first head, the second division being the Motor. I have in fact finished in manuscript both the first head and the second but have changed my mind as to sending you anything in written manuscript form; it is so much more satisfactory to you to have it in print. This is what has detained the matter and prevented me from sending it as I advised you was my intention. You will see in reading this that the criticisms you pass on my first letters cannot be made applicable to my present treatment of the subject. I have to revise and re-write a great deal of this stuff before it becomes perfectly clear to my own mind, and, therefore, before I can make it clear to others, or in other words, I am educating myself as I go along. If my argument and deductions are not perfectly sound you must devote a little time to correcting them. If they

2) are in entire accordance with the facts, you must promptly say so as your endorsement of my work renders it of great additional value. I find it very difficult to convince the most expert of Electricians of the correctness of some of my views, and since I am always very positive, if I make mistakes I shall have to make abject retractions. As soon as I can get the Motor and Dynamo Manuscript to my satisfaction and in print I will forward it also. I know less about the Dynamo than I do about the Lamp, but as I know more about the Lamp today than I did yesterday by reason of the study I am compelled to give it, I think that for the same reason I shall know more about the Dynamo tomorrow than I do today.

In respect to your increased resistance Lamp I have explained to our people its practical value in this way. — Increase of Lamp-resistance permits increase of Conductor-resistance. Increase of Conductor-resistance means increase of area supplies from a common centre with a given amount of copper. Increase of area distribution means decrease of number of Stations. Decrease of number of Stations means less real Estate investment, greater subdivision of many central station devices, and that since the station is located central of the area to be supplied, any increase of the distance at which the Lamp can

3 be economically supplied, means an increase of the area by four - that is as to the square. Therefore, an increase of Lamp-resistance is an item of very great value as affecting the question of the cost of distribution; and since this question is the one which has not yet been practically demonstrated, it is the question upon which our ability to supply Electric Light at the cost, or less than the cost of gas, turns. It has been abundantly proven that gas converted into power, and that into Electricity, and that again into light, will produce more light on the spot where these several conversions are made than would the gas if burned directly for the purpose of light. ~~Therefore, Electric light is cheaper than gas light;~~ therefore, Electric-light can be produced for less than gas. The price paid for the gas to operate the Engine is not a factor in determining this, since whatever may be the price of the gas for driving the Engine the fact remains that it is more economical to convert it into light through the intervention of the Electrical medium than to burn it directly as gas, always providing the cost of the plant for so doing is not excessive. I hold that this is a complete demonstration of the fact that the Electric Light may be produced for less money

4 I have gaslight and that, therefore, the only question is, will the investment necessary to effect a practical distribution of the light be such as to eat up the margin of difference in cost? I tell our people that this is the only question yet to be determined and it is to be determined solely by the resistance in a lamp and that, therefore, any advance in the direction of increasing this resistance enables us the better to compete with gas. Of course increased resistance does not affect the question of coal consumption, Engine, and Dynamo investment directly, though it does indirectly by giving us a greater benefit of the law of general averages since a much larger demand may be supplied from a single source; but your announcement that you were going to give us 12 per Electrical horse power directly bears upon this coal consumption and Engine and Dynamo investment. This part I am able easily enough to make them comprehend; the other part is the more difficult. However, the fact that there are two directions in which we can move towards successful Commercial competition with gas is now generally accepted and has materially added to the faith of all in the ultimate Commercial success of the Edison system in competing with gas, even



5 in London, and also in creating a proper sense of the wide economical margin between the Edison and other systems of Electric Lighting. I may yet have to write a paper on this whole subject for private distributions. I have talked it to individuals so effectively as to have them express the desire that they could retain my arguments and repeat them to others. This suggests putting them in print, solely, however, for private use. Some facts and some figures from you and Clarke, given to me now, may anticipate this work and the better fit me for doing it in a first-class manner.

I am, my dear Edison,

Very truly yours

Edward H. Johnson

Merry Xmas  
& happy New Year  
1887

## THE EDISON ELECTRIC LIGHT.

**MR. EDISON**, at the very inception of his work, foresaw that the whole solution of the problem of subdivision lay in the combination of high resistance with small radiating surface, and therefore, through all his work will be found ever prevalent this idea. That it has been fully corroborated by events proves his keen foresight, and justifies the assertion he made on conceiving the idea, viz.: "I have found the true solution of the problem of subdividing the Electric Light." With him the provision of the means and methods are always mere matters of persevering experimentation, and sure ultimately to be found. That he succeeded in effecting 32 candles of light from platinum wire ere he finally abandoned that metal for carbon, is only another illustration of his wonderful fertility of resource and thoroughness of work.

The Edison Electric system may, for the purpose of a clear analysis or understanding of the functions of its component parts, be sub-divided under the following heads:—

*First*.—The high resistance, unit, point of energy, absorption, i.e., the Lamp where light is the object, and the Meter (where power.)

*Second*.—The low resistance, unit, point of energy, generation, or more properly speaking, conversion, i.e., the Dynamo.

*Third*.—The medium of transmission of the electrical energy, from the point of generation to the point of consumption, i.e., the Conductor.

*Fourth*.—The means and method by which a constant of Electrical pressure (Electro motive force) is preserved. These comprehend the Boilers, the Engines, and the devices for regulating the strength of the Magnetic Field of Force.

*Fifth*.—The confinement of the energy within designated limits, i.e., the Insulation.

*Sixth*.—The protection of the light, the conductors, and the dynamo, i.e., the Protector.

*Seventh*.—The measurement of energy at the several points of consumption, i.e., the Meter.

*Eighth*.—The appliances by which domestic supervision and care are rendered sufficient, i.e., simple and practical lamps, fixtures, &c.

## PRELIMINARY REMARKS.

It will be observed that I have used the word "unit" in alluding to the resistance of the lamps and of the dynamo. I do so because in any practical system the resistance of each of these factors must be a standard unit. Mr. Biot's method of subdivision is what is known as the multiple are principle—that is the two conductors are "straddled" by the lamps at one end, and by the dynamos at the other, thus constituting the dynamo, the conductors, and the lamps, one complete circuit. It will be observed that by this method the circuit is always complete so long as there is one lamp at one end and one dynamo at the other; the addition or subtraction of one or more lamps or dynamos only varies the resistance of the circuit by supplying the current energy with more or fewer channels for its passage, such addition or subtraction can therefore never break the continuity of the circuit; thus the "turning off" of one lamp cannot interfere with those remaining. It will be apparent that in such an arrangement the pressure of the electrical energy must be of one denomination, this being the case the resistance of the lamps and the dynamos must be of a uniform character if uniform results are to be obtained; and uniform results being the desideratum, it follows that a unit or standard resistance must be had in each.

For the better enabling those having the examination of the patents in hand, I will write out, to the best of my ability, a treatise on each of the eight heads under which I have placed the various factors of the Edison System, giving emphasis, as I pass them, to what in my opinion are vital or important details.

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I have endeavoured to place the several heads in the order of their relative degrees of importance, without at the same time impairing seriously the thread of the description. I have therefore been compelled to start with the Lamp, rather than with the Dynamo, since the former is really the one thing of pre-eminent importance, and without which the sub-division of the electric light would as yet be still unaccomplished.

#### First, The Lamp.

This consists of a *high resistance filament or thread of carbon* enclosed in a bulb or globe made entirely of glass, and from which the air and gases have been expelled to the point of a millionth of an atmosphere, commonly expressed as a "high vacuum." Mr. Edison conceived in the first instance that high resistance in combination with small radiating surface in a high vacuum was a pre-requisite to success in the problem of sub-division; but when his first patents were taken out he was engaged upon a process of preparation of platinum conductors for his incandescent loop, and, finding great encouragement in the progress made towards increasing the refractory power of the metal, felt more or less sanguine of his ability to give to platinum a quality which would render the high vacuum unnecessary. Towards the close of his use of platinum however he concluded the use of a vacuum was inevitable.

In the process of obtaining the requisite high vacuum, he found it essential to continue the exhaustion of the air or gases after the current was applied to the conductor, as observation showed that otherwise as soon as it was applied, the vacuum fell off several degrees. This better result he rightly concluded was due to the occlusion of gases from the cells of the platinum. Upon applying this process, he found another effect quite as important as improving the vacuum was obtained, viz., that the platinum loop became many times harder and more dense; thus very greatly raising its fusing point. In fact, giving it the properties of a new metal. Whereas at its natural fusing point, it emitted a light of but 3 or 4 candles, it now gave out a brilliant glow of 25 or 30. Thus in the treatment of all future lamps, whether the loop was of metal or carbon, this process of occluding the gases during exhaustion was always used for the dual purpose of securing a better vacuum and for rendering the loop more refractory.

[ENCLOSURE]

#### MAINTENANCE OF A HIGH VACUUM.

In the early efforts to obtain a high vacuum, great difficulty was experienced in maintaining it for any considerable length of time; the authorities on the subject of vacuum were at this time loud in their assertions that this desideratum was unobtainable. The most eminent so arguing, because of the existence of the platinum wires in the glass. It was asserted that the difference in the rates of expansion and contraction, between platinum and glass, would inevitably admit air into the bulb, even if it did not ~~crack~~ break the glass; and it was by some maintained that air was admitted through the pores of the glass itself during the process of natural expansion and contraction. The first-mentioned theory had a good basis, since in all experiments with incandescent lighting in vacuo, prior to Mr. Edison's discoveries, comparatively low resistances were used for the light giving bodies, consequently low resistances or large lead wires were necessary to convey the electrical energy to it. This thick platinum conducting wire would naturally effect a sufficient margin of strain and release upon the glass through which it passed to produce a "leak," or break the glass. This difficulty was entirely surmounted by Mr. Edison's adoption of the exceedingly thin lead wires; the marginal effect of which was too infinitesimal to produce a leak. Such was Mr. Edison's opinion at the time, although the difficulty of "loss of vacuum" still continued. Mr. Edison now sought elsewhere for this leak, not believing in the theory of leak through the pores of glass. This led to an important discovery, viz., that when the bulbs are "sealed off" the pumps, in the usual manner (i.e., by molting the glass tube joining the bulb to the pump) a microscopic tube was made, no matter how fine the tube was drawn it still had a hole in it, in fact retained its tubular form, even though drawn to a thread. On discovering this the remedy was readily found in re-sealing the point left by the breaking off of the thin thread, a little ball of solid glass was formed at this point, and the air pressure now being brought into service forced the solid glass into the end of the tube thus closing it up and allowing of the formation of a solid glass cap or ball, this lamp on trial proved entirely satisfactory, in fact this method of sealing finally disposed of the difficulty. *Mr. Edison claims, glass* therefore, to have been the first to wholly seal a vacuum bulb for incandescent lighting with glass, and I think investigation will sustain the claim.

After thus providing against a return of the air into the globe, Mr. Edison found that his vacuums rapidly deteriorated on use, seeking for the cause of this led to the discovery that when the conductor in the vacuum was subjected to the action of the electric current, the gases contained within its coils were expanded and forced out into the vacuum, thereby filling the globe with their presence, and materially reducing the value of the vacuum; upon making this discovery, he adopted the plan *of heating the conductor during the process of exhausting the air, so as to exhaust the gases as well.* The result of this was to perfectly and permanently overcome the difficulty of maintaining a vacuum, and at the same time to give to the platinum conductor a character absolutely unique; it became solidified, as it were, and perceptibly smaller in diameter, in fact so changed in every respect, as to justify its being termed a new metal. This discovery of Mr. Edison is one of the most important in the whole record of his investigations, since without achieving the incandescent substance to such a process, it is practically impossible to produce a good vacuum or a good conductor. Mr. Edison's claim to this process should therefore be maintained at all hazards; the attempt to appropriate it made by Mr. Swan is too transparent—the application of the process to a carbon conductor involves no invention whatever, and as this is absolutely all that Mr. ~~Edison~~ Swan has done, it is clear he is not entitled to a Patent. No lamp of any description has been made by Mr. Edison since this discovery, except by the use of this process. No vacuum obtained without it is of any practical value, for reasons which will appear in the treatise ~~on~~ the radiation of light from the carbon filament.

#### THE CARBON FILAMENT.

The function of this portion of the lamp is a dual one, viz.:—the effect of an economical distribution of energy, and to effect an economical conversion of energy into light.

The distribution of electrical energy throughout a circuit is in direct proportion to the resistance of that circuit that is to say, every unit of the conductor resistance will have active upon it, an equal degree of energy. Thus, if a conductor is made up of two parts, one of which consists of a mile of copper wire half

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The distribution of electrical energy throughout a circuit is in direct proportion to the resistance of that circuit that is to say, every unit of the conductor ~~resistance~~ <sup>resistance</sup> will have active upon it, an equal degree of energy. Thus, if a conductor is made up of two parts, one of which consists of a mile of copper wire half an inch in diameter, having, say, one ohm resistance, and the other of ~~an~~ <sup>an</sup> inch of a poorer conducting material, say, carbon, having ~~also~~ <sup>also</sup> one ohm resistance, there will be precisely that amount of energy in the one half of the circuit composed of the one inch of carbon, as in the other half composed of the one mile of copper rod.

Supposing, therefore, a material amount of energy to be passing in the circuit, we will have half of it concentrated upon the small carbon pencil, while the other half is spread over the enormous copper wire. The result is obvious. The great superficial surface of the copper will permit of the heat being radiated in such infinitesimal degrees per unit of its surface as to be wholly undetectable, while the small area of the carbon will be so wholly unequal to the task of throwing off its heat, as to compel its translation into another form of energy, viz., that of light.

If we desire to concentrate a greater portion than fifty per cent. of the energy on the carbon, we must ~~increase its resistance~~ <sup>increase its resistance</sup>, and as it is important to have as small an amount of copper in our mile of conductor as possible, for commercial reasons, we must at the same time ~~reduce its size, thus increasing its resistance~~ <sup>reduce its size, thus increasing its resistance</sup>. This compels us to abnormally increase the resistance of our carbon in order to obtain a ratio of carbon resistance many times greater than that of the copper.

Now, if we include in the copper conductor that portion of the circuit which is incorporated in the dynamo, it will be seen that we must ~~keep the resistance very low~~ <sup>keep the resistance very low</sup>, or we shall have in our "mile" of copper so great a resistance as to approximate that of our "inch" of carbon.

Now, if we will consider the "mile" of copper to represent the dynamo and the conductors, and the "inch" of carbon to represent the lamp, we will observe, that to have the largest percentage of the total energy created delivered at the lamp, where it can be translated into a marketable product, i.e., light, we must have the greatest possible disproportion of lamp resistance to dynamo and conductor resistance.

The problem of economical energy distribution is therefore to obtain ~~the highest possible resistance~~ <sup>the highest possible resistance</sup> permitted by other requirements of the lamp, and the ~~lowest possible resistance~~ <sup>lowest possible resistance</sup> in the dynamo and conductors, permitted by the requirements of the dynamo and the money value of copper. The function of resistance is therefore simply to permit of an economical transportation of the energy from the dynamo, which constitute the common source of energy supply, to the lamps, which are necessarily spread over a wide area and located at innumerable points, more or less distant from the supply centre. If the lamps and the dynamo were all located in one place, resistance in a lamp would cease to be a factor. Thus resistance only becomes a factor when the question of distribution arises.

The problem of rendering active upon the carbon the greatest possible percentage of the total energy generated, must not be

not confounded with that of the economical conversion of energy with light, the one has to do solely with the economical distribution of the energy, the other simply with its economical utilization after distribution. The one is determined, as we have seen, by the ratio of lamp to generator and conductor resistance. The other solely by the extent of the radiating surface of the carbon; that is to say, whatever may be the amount of energy active in the lamp, it will produce exactly the same amount of light on a given radiating surface, whether the resistance be one ohm or a thousand.

The high resistance desired for the purpose of energy concentration within the lamp, is obtained by the use of a very slender thread of carbon, this slender thread of carbon ~~offers~~ <sup>provides</sup> a second but wholly distinct desideratum, viz.: a very small body upon which the energy is to be translated from heat into light. It is of course a well known law that a given amount of heat acting upon two bodies, one a large and one a small one, will produce results in ~~direct~~ <sup>inverse</sup> proportion to the ratio of their size. If, then, we desire the heat produced by the energy in the carbon to be transformed into light, we must have a body so proportioned to the amount of heat at our disposal as to permit of that degree of temperature being reached which yields light, and is commonly known as incandescence. The problem here then is to have the smallest possible surface in order to obtain the required degree of light with the expenditure of the least possible energy.

The factors determining this minimum of surface are: first, high refractory power; second, isolation of the heated body from all heat-conducting media.

The first is found in a remarkable degree in the material selected, viz.: carbon made from vegetable fibre, and is largely augmented by the peculiar treatment to which it is subsequently subjected. The second is obtained by placing it in a receiver from which the air has been exhausted, and by expelling all the gases from the cells of the carbon itself during the process of vacuum exhaustion, thus shutting them, as well as the air out of the globe and leaving the carbon in an atmosphere of such exceeding ~~vacuity~~ <sup>density</sup> as to preclude the radiation of any material degree of heat from it to the walls of the globe.

A third factor limiting the minimizing of surface area is that of durability. If the body is excessively small it will not long stand the wasting effect of the high temperature, ~~so~~ <sup>therefore</sup> a limit in this respect is had. This limit is determined by the cost of replacing the lamp when it has failed, and by the value of the energy utilized by it in effecting light, that is to say, the economical life of a lamp is the mean between its cost, and the value of the electrical energy ~~used in~~ <sup>consumed by</sup> it in a given number of hours. It is more economical to renew a lamp costing a shilling at the end of 1,000 hours, than to expend even a very small percentage more of energy on a slightly increased body area during each of those 1,000 hours, (and thus make it last 2,000 hours.) The extra expenditure of energy per hour would cost many times the shilling—the cost of lamp renewal.

Thus the extent of the radiating surface is determinable by the above factors, and the determined surface becomes the sole factor in determining the amount of energy requisite to produce a given amount of light.

The shape or form of that surface area has nothing whatever to do with the question. It may be a sheet, a sphere, a stick or a long slender thread, just as long as the surface remains the same, the amount of energy used to ~~give~~ <sup>produce</sup> a given amount of light will be constant.

Therefore resistance is no factor in the economical translation of electrical energy into light, for it is apparent that if the carbon was in the form of a sheet, sphere, or short stick, its resistance would be practically; nil; while, if elongated into a slender thread, it would be very great.

Resistance and radiating surface are therefore absolutely distinct factors in the problem of electric lighting. Without the possession of the first, the lamp is perfect in all respects. The combination of the two has but one object, viz.:—the utilization of the lamp at a distance from the source of energy supply.

The argument, therefore, that Mr. Edison's claim for high resistance in combination with a slender filament is anticipated by the recorded efforts of others to obtain thin carbons, in order to obtain an economical conversion of energy into light, has no sufficient basis. There is, in fact, no indication that in searching for thin carbons they were necessarily searching for thin carbons of high resistance; on the contrary, all the evidence points in the opposite direction, viz., thin carbons and low resistance; I main-

carrying by  
conduction

Electrical  
action

the above factors, and the determined surface becomes the sole factor in determining the amount of energy requisite to produce a given amount of light.

The shape or form of that surface area has nothing whatever to do with the question. It may be a sheet, a sphere, a stick or a long slender thread, just as long as the surface remains the same, the amount of energy used to give a given amount of light will be constant.

Therefore *resistance* is no factor in the economical translation of electrical energy into light, for it is apparent that if the carbon was in the form of a sheet, sphere, or short stick, its *resistance* would be practically; nil, while, if elongated into a slender thread, it would be very great.

*Resistance* and *radiating surface* are therefore absolutely distinct factors in the problem of electric lighting. Without the possession of the first, the lamp is perfect in all respects. The combination of the two has but one object, viz.:—the utilization of the lamp at a distance from the source of energy supply.

The argument, therefore, that Mr. Edison's claim for high resistance in combination with a slender filament is anticipated by the recorded efforts of others to obtain *this* carbons, in order to obtain an economical conversion of energy into light, has no sufficient basis. There is, in fact, no indication that in searching for *this* carbons they were necessarily searching for *this* carbons of high resistance; on the contrary, all the evidence points in the opposite direction, viz., *this* carbons and low resistance; I maintain, therefore, that Mr. Edison's claim for a filament of carbon of high resistance is good.

It is a claim for a means of subdividing and distributing electrical energy for the purpose of producing light, and not simply for an electric lamp *per se*.

That A had experimentally produced one part of the combination, and B suggested that the other was a desirable thing in the problem of electric lighting, is, to my mind, no sufficient estoppel of O's claim to invention, based on the practical combination of the two, especially in view of the fact that A says he had his part for twenty years, and yet he nor others could not combine it with high resistance, and thus anticipate Mr. Edison in solving the problem of forty years.

#### CONSTRUCTION OF THE CARBON.

A few words on this subject will explain Mr. Edison's theory as to the production of a superior carbon. It is that a *natural fibre* should be chosen, and not one manufactured by man. In the natural fibre the integral construction will be perfect, while in the manufactured fibre, it cannot but be heterogeneous. For example, take a piece of bamboo, the fibres will be found to lie in perfectly straight lines, and to be composed of an infinite number of infinitesimal cells, the walls of which are thick and strong, thus rendering the body exceedingly homogenous. If the filament of these fibres to be carbonised consists of, say six individual fibres, and the process of cutting the wood be mathematically accurate, so as to ensure six fibres, no more or less, throughout every unit of its length, it must follow that when carbonised, the carbon will present throughout its length the same uniform character. This is evidenced by the fact that when a bamboo carbon is energized by the current, sufficient only to bring it to a degree of heat showing a fair red, the shade of that red will be found to be absolutely even, thus proving that the resistance, the refractory power, and the extent of its radiating surface is absolutely uniform. True, one carbon may differ from another in all these several respects, but it will be due to the prime density of the material, the accuracy of the cutting machine, the perfection of the carbonizing, or the care and completeness with which the gases are forced out of their cells. In other words, given a uniform quality of material perfection in manufacture will ensure a uniform result.

Now, take a carbon, made of a piece of paper. The paper is a manufactured article, and consists of small broken fibres, heterogeneously thrown together and pasted in their accidental position by a non-carbonizable material. The result is easily foretold. In the process of carbonizing the paste is decomposed, the irregularly locked, short, and twisted threads only remaining. Examination under a microscope will reveal a state of things suggestive of a "stump fence," rather than of the neat and regular parallel lines of a "post and rail." This irregular construction is shown

more markedly and in a fatal way, by subjecting the carbon to the same electrical energization prescribed for the bamboo. The "red" will now be found to be of a chequered character—i.e., red only in spots, white in others, and black in others. That is to say, the carbon of variable density, resistance and refractory power, and of varying superficial area. The cross section, having the least material (i.e., where the prongs of the "stump" only unite) will be of comparatively small surface, and will be *incandescent* instead of red and so on. Now this state of things is recognized, and a remedy is sought in the adoption of the process of depositing hydro-carbon upon these *weak spots*, and *building them up* to a uniform density and area with the other portions. This is done by sealing them in a vessel containing ~~hydrogen~~ *hydrogen*, ~~gas~~ *gas*, and electrically energizing them. The theory being that at the points of highest temperature (i.e., the weak spots) there will be deposited the greatest quantity of carbon.

In practice Mr. Edison found long ago (in 1879)—and others since—that this was so only to a very limited extent. That while the weak spots were being built up, say at a rate of 5, the stronger parts were also receiving an addition at the rate of say 3 or 4, and that by reason of the fact that "a stern chase is a long chase," ere the weak had overtaken the strong the whole had become of such bulky proportions as to prove valueless, on account of its *diminished resistance* and *increased surface*.

This is the explanation of the fact, that Edison alone gets *uniformity* and *high resistance*. His *modus operandi*, therefore in this detail is of the first importance, and should be carefully borne in mind in reference to his patents.

There is yet another important factor in the construction of the Lamp, which involves the question of economy of energy, economy of construction, and the life of the carbon, viz.:—the perfection of the *contacts* between the lead wires and the ends of the carbon loop. It is now well known that imperfect contact offers resistance, and resistance in this case means heat. Carbon being a semi- (i.e., poor) conductor, it is apparent that there must be a difficulty in effecting a good contact with its surface. This difficulty becomes an element of considerable importance; where the surface dealt with is so exceedingly small, as would be the end of the filament of carbon if left of the same dimensions as the body. To obviate this difficulty, as far as practicable in this respect, the ends are *enlarged*, and small clamps or cups of platinum or copper which have been attached to the lead wires are shaped so as to cover as much of the surface of this enlarged end as practicable. If a platinum clamp is used, it is usually made to hold the carbon firmly by small screws passing from one jaw of the clamp to the other, as in a vice. This method has, however, two objections. This screw, or the clamp jaws, ~~soon~~ *soon* become heated and relax their hold, making a still more imperfect contact and still greater heat, the result of which is to finally allow the carbon to escape altogether, or as sometimes happens, to transfer by conduction, a sufficient degree of heat to the platinum lead wires to cause their expansion, and a consequent breaking of the glass. All this heat is of course waste energy, and besides the effects mentioned, there is established a resistance, independent of that of the carbon proper, which of course alters the conditions of the whole, and results in a diminution of light.

Aside from these considerations, is the one of the cost of these clamps, a very material item, there are many other devices than clamps, by which the platinum lead wires are united to the carbon direct, but all partake in even a greater degree than the one described of the objections named. The best, and the only really practical method of effecting this connection is the one adopted finally by Mr. Edison. It consists of a small copper cup-shaped receptacle, made by soldering a piece of copper wire, to the end of the platinum lead wires, then hammering it out and folding the flat plate thus obtained, sidewise, so as to bring its two edges near to each other, the enlarged ends of the carbon are then dropped into these receptacles, and the very gentle pressure they exert suffices to hold the carbon in a proper position temporarily. It is then submerged in an electro-plating bath, in such manner as only to subject the clamping point of the carbon to the action of the bath, and a deposit of copper is laid upon the surface of both the cup and the carbon ends, thus firmly welding them together as if one body, this device invariably ensures freedom from all the difficulties above mentioned. It is an economical method as compared with any other that for



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The terminals to which the lead wires are joined, to facilitate the connection with the main wires of the system, will more properly resolve attention in the description of the socket and other fixtures.

The method of carbonizing the fibre may properly be considered in any description of the Lamp, although I do not know that Mr. Edison has constituted the process a part of his patentable system. The process consists of placing each fibre in its own mould, and then placing a number, say 20 or 30, of these individual moulds in a larger receptacle. This is then sealed, so as to exclude the air, and being placed in a furnace, the whole is brought to a very high temperature, closely bordering on the melting point. The vessel is then removed, and after being allowed to gradually cool, is opened, and the small moulds removed, and the fibres—now carbonized—are found to be of the shape desired for the Lamp, and to be perfectly uniform in every respect. This uniformity of shape, degree of carbonization and perfect freedom from oxidation, is obtained by means more or less novel and difficult of attainment. Mr. Edison may have described some of them in his patents—this will appear on further examination.

These remarks will apply also to the means employed to obtain a thoroughly good vacuum pump. There are many difficulties in the way of obtaining a good vacuum in an economical manner. Mr. Edison has solved these, and his factory is equipped with 500 vacuum pumps of his own design and arrangement, all more or less novel, and giving to the pump a quick and efficient vacuum-producing capacity. These and other details connected with the manufacture of the Lamp I will not now describe minutely, but will of course do so if reference is made to them in the patents under examination.

With this qualification as to a return to the Lamp, I will now pass to the second item of the first head viz., the motor.

*NOTE  
Description  
System of  
Circuit weight  
of the Lamp  
in Carbon  
Lamp  
is made to  
produce or  
prevent  
friction  
S.H.P.*

Rev

English Light

Almagro  
6 Lombard Street, E.C.

London. Dec 24. 1886.

My dear friend

With no great pains  
to me but I feel the  
weight you put a  
freedom in my own  
meaning heart to

congratulate you on  
the glorious realization  
of your great promise  
of two years ago in the  
light of the light.

Accept then my most  
heartfelt sympathies  
with you in this coming  
vision of your transcendent  
future. I cannot help

in this anniversary paying a  
tribute to your sacrifice  
performed in the service  
of freedom to every man  
you ever met. I believe  
there is no man living  
who could have proved his  
equal for the purpose.

By the way he & his I  
will be spending the  
Christmas holidays with me  
& we shall not forget to  
send your great health  
& constant prosperity &  
that of your good wife  
& home.  
I have spent your first  
the trouble of reading what

which must have passed  
but a repetition of letters  
is better. If Father & John  
Walter Edwards, all in  
Suffington & Sargent  
are getting a mistaken plan  
of the great question  
demonstration, & how they  
are disappointed in  
to want to bring out the  
possible truth, some action  
must be taken to be  
the very best plan in London  
against all enemies.

Father will tell me of  
my proposal as to the  
city of London & my  
plan in London now.

will see its advantage.  
I will also show to him  
the true of my views &  
feelings upon the subject  
of my connection with the  
formation of a London Co  
of friends should it  
not be done with me &  
my friends. I shall send  
you more fully on the  
point later should my  
proposal be not  
accepted. I must  
under be a great comfort  
my on life of the man  
who has to hand & so  
many friends in

2

6, Lombard Street, E.C.

London

(3)

18

In writing you of the  
 just friends of your  
 friends in the Whig  
 should explain me to  
 appear to explain  
 me to be understood if  
 he thought only his  
 friends with the combi-  
 nation as he certainly  
 would to the teachers  
 of men, & what would  
 my friends think of the  
 views of people the  
 very first people in  
 London, whom at their

(6)  
I have been & again  
promised, "I'll never give  
a chance at the light  
when the time comes," &  
who have consequently  
started the opposition  
against the usual compromise  
namely the Board when  
they would have made a  
deal of money. I myself  
expressed a most pressing  
invitation to join the  
Board & that he would  
not do so.

I have to say that the  
British Light Board are  
very generous & that  
I would like to be

free. I have found them  
called to ask me about  
it, & I have been  
obliged to say that I  
know nothing of it.

If A.W. were to be free  
of another British Co. I  
believe it would be better  
for them & public interest  
that you will be  
ultimately benefited out  
of it just now will  
be through a question of  
time. You will see that as  
well as I do that I  
could not in any case  
have any part to do  
with the British Co. as I am not

Mr. Will. I am sure as far  
as you can protect me from  
such an enormous injury.

I was amazed that Fisher  
had any idea of being  
anything except through me  
& my friends or at least  
that I could show that  
I could not do the business  
on satisfactory terms, or  
on satisfactory terms as  
could be made with any  
body else - but I should  
feel myself above any  
compensation the business  
with the party in question.  
I am sure for the patent  
work with Elmer but in

3/

6, Lombard Street, E.C.

London. (9) 18

had enough of him as  
for the Co. & you ought  
to have had enough of  
his ideas of how the  
Patentee's interests are to  
be treated.

Keep this quite confidential  
I beg you & rest assured  
that I do not wish to  
embarrass myself when I  
am not wanted, tho'  
if there be a man living  
who is qualified to consider -  
also in this business as  
England I am that man.

Consideration I mean,  
from the Co.  
C. W. W. W.  
W. W. W. W.

THE EDISON ELECTRIC LIGHT SYSTEM.

EDWARD H. JOHNSON,  
MANAGER.

57, Holborn Viaduct.

London, E.C. Dec. 29<sup>th</sup> 1881

Thomas A. Edison Esq.  
65, Fifth Avenue  
New York.

My dear Edison,

I am sorry to say that I am met on all sides by astonishment at the price I ask for our Dynamos, namely £200. I gave Sir William Thomson a price for 3 Dynamos £180 each. He wanted it for the purpose of supplying a friend of his who had a large factory and was about introducing Electric Light. Sir William writes to me to say that Siemens' machines have been adapted instead of ours on account of the price, namely £90 each. He doesn't say however, anything about economic efficiency of the Siemens' machine. This seems to be a very difficult bit of information to obtain. The Paris Electric Exhibition offers us data and as far as I have been able to find none can be had anywhere. I have written Thomson a letter calling his attention to the fact that his rejection of our machines is simply based on their cost and that he



2) gives no information whatever as to whether the difference in the economy of coal consumption will not more than compensate for the difference of cost. I have asked him to accord me an interview to discuss this whole matter with him I agreeing to go up to Glasgow for the purpose. I have informed him that the Dynamo I sent him shall not be returned to me until he has either endorsed it or condemned it, and have further asked him if he is prepared to officially pass upon the economy of our small Dynamos independent of the larger and more important experiments he is to make with our Central Station Plant later on. I think I can secure his services for this purpose in which case I will have his findings printed in Circular form and will use them for the purpose of obtaining a fair price for our Dynamos. Meantime there is no doubt in my mind but that we have got to very considerably reduce our price. I find that by paying you \$570 on board ship in New York that by the time we come to sell the Dynamo it costs us \$620. Now add 25 per cent only as a margin of profit; it stands us in \$775 equal to £155. Now if any reduction of price can be had anywhere so that I may sell these Dynamos for £150 I think I can successfully compete with Siemens and Gramme by making

3 / full use of the facts as to superior economy etc, There is no disputing the fact that a very large proportion of the people who want isolated plants have a surplus of power which they count whether rightly or wrongly as now wasted and they look more particularly to first-cost than they do to running expenses. I have taken the ground that I do not care for this class of business but I am afraid that if we ignore it we will find it very difficult to secure much trade in other directions. Please carefully consider this whole matter and see if you cannot somehow reduce the first-cost to me. In every other respect we are fully able to hold our own. I have the Steam Dynamo together and can be ready to run in a very few days. I propose to run it as a Steam Engine simply for some time to ease up the bearings, get the knock out of the Steam Engine and generally to make it an efficient machine before applying the current. Meantime I am pushing forward the preparation necessary to receive the other Dynamos. My Contract with the City is to commence lighting on the 1<sup>st</sup> February. I want to have the second machine in place by that time and several days have now elapsed since you

4 reported it as ready for trial but I have  
heard nothing from you.

Prece's second Lecture at the Society  
of Arts for the benefit of the Juvenile members  
came off last night and as you will see by  
the notice sent you, was illuminated by the  
Edison light in a very satisfactory manner.  
You will notice in the "Daily News" article  
a reference to my new Chandelier. It is not  
the Chandelier about which I have been  
writing to you but is a small one on the  
same principle. I think you will have a  
more glowing account of the large one  
as the effect will be much finer. In the  
small one the flowers are too large for  
the other parts of the fixture thus making  
it appear out of proportion. Two Lamps gave  
out last night during the Lecture, one gave  
way in the carbon and the other arc'd.  
Am I going to have serious trouble in  
this respect here and at Crystal Palace?  
I hope not. I will have some 2,000 Lamps  
in operation at one time; if they are going  
to give way rapidly I will need a large force  
of men to keep replacing them which will

5  
necessarily attract considerable attention. Crystal Palace will be ready to open up the later part of next week. No matter is so far advanced. I therefore expect to be the first one to light up which of course will be a card for the Edison Light. Everybody else is at work and the exhibition promises to be a decided success. Batchelor is shipping me all your other Exhibits and I am getting them into position. What about motors? We need them both here and at Crystal Palace. You have not shown a motor on this side yet and it is exceedingly important that you should do so. I have a floor of this building fitted up as a Laboratory and repair shop and ~~think~~<sup>am</sup> of arranging to drive the machinery (a few light lathes) by a motor. I also want to show one at Crystal Palace. Please send forward at once if you can do so, if not please tell me that you cannot and why. The price list of Armstrong & Sons Engines you sent me is rather meagre. I will, however, have some Engineers to interpret it for me.

Very truly Yours,  
Edw. N. Johnson

If you will let Mr. Fabbri read this you will save me double work. E.N.J.

10

London Dec 21/81

My Dr Edison

Having had considerable trouble in convincing Bidwell & others that Resistance as such was not a factor in the Economical Conversion of a given unit of Energy action on a given carbon surface

- That is to say that with a given surface & a given current action on it the same light would be obtained whether the Resistance was one ohm or a thousand

-I have finally made this illustration  
I send it to you for your criticism

"Take an Edison Carbon

125 Chus Res. ~~Chomper~~ of element  
yielding 16 exudes of light.

Now divide the 6 inches of fibre  
into one hundred & twenty five  
parts - not actually - but in  
your mind - & you will

"have the following:

$\frac{1}{125}$  of the total length of Carbon  
yielding  $\frac{1}{125}$  of the total line of light  
- or  $\frac{1}{125}$  of 16 candles = and measuring  
 $\frac{1}{125}$  of the total Res, or 1 ohm =

Now assuming that you can do so  
with out ~~subtracting~~ subtracting from  
or adding to the surface - actually  
divide the carbon as above -

Stand the pieces up on end on a  
metal plate - not in contact with each  
other - but close together - place a  
second plate on top of them  
- & pass an ampere of current  
from plate to plate - what is  
the result? =

=  $\frac{1}{125}$  of one ampere is active on  
Each little Column of  $\frac{1}{125}$  of the  
total length - & which has 1 ohm  
Res. The result is inevitable  
- viz: Each ~~block~~  $\frac{1}{125}$  of the carbon

3.

~~is~~ ~~being~~ is under precisely the same conditions as was before & must yield it  $\frac{1}{125}$  of the total light = & the whole no. of columns must use an one ampere & yield 16 candles of light - But the resistance is changed from 125 ohms to  $\frac{1}{125}$  of one ohm

If one could imagine that the Carbon be divided into separate molecules say ten million & the whole multiple are  $10^6$ , the result would necessarily be the same - "

Bidwell thought he had me by saying "Take an extreme case - Suppose we imagine a carbon without resistance - Since the expenditure of Energy is in proportion to the Resistance there would be no expenditure consequently

"no light" - I replied that the "8" was  
an unfair one as it was impossible  
= Resistance is simply a relative  
term - The only Conductor that  
could have no resistance - would  
be a perfect non conductor - to  
perpetrate an Irish Bull =

What do you say to all  
this? Am I sound in  
my logic? ✓

W. H. Johnson  
Happy New Year 1892



Copy

EDW<sup>d</sup> H. JOHNSON,  
MANAGER.

Re

THE EDISON ELECTRIC LIGHT SYSTEM.

57, Holborn Viaduct.

London, E.C. Dec 31<sup>st</sup> 1881.

Theodore Waterhouse Esq  
Sal<sup>r</sup> Manchester

Dear Sir  
In further proof of my proposition that the resistance of a conductor of a given extent of radiating surface may be infinitely varied without affecting the question of the economy of the conductor as a converter of Electricity into light, I beg to offer this illustration. Take the Carbon of our present lamp, it is 6 inches long, measures 125 Ohms resistance has about a quarter of an inch of radiating surface and with the expenditure of about an ampere of current yields a total of 16 Candles of light. Now divide this thread into 125 parts and we have the following: -  $\frac{1}{125}$  of the surface,  $\frac{1}{125}$  of the light,  $\frac{1}{125}$  of the Energy, yielding  $\frac{1}{125}$  of the light. Now take all these small sections, stand them on end on a metal plate, close to but not

2  
touching each other. Now place a second plate on top of them & connect the two plates with the lead wires and pass 1 Ampere of current through the whole and we have this result; each of the 125 little bridges would have expended on it precisely the same amount of Energy as in the former case, its surface is precisely the same, its resistance is precisely the same and it must in consequence yield precisely the same amount of light, namely,  $\frac{1}{125}$  of the 16 Candles. We therefore have in the aggregate the following: 1 Ampere of current acting on a quarter of an inch of surface and yielding 16 Candles of light, but a radical change has been effected in the aggregate resistance whereas it was before  $125^{\text{th}}$  parts of resistance it is now  $15.625$  times less and yet 1 Ampere of Energy is made to yield the same unit of light. Draw on the imagination for a still further subdivision of the Carbon until we have only the molecules of the Carbon itself constituting single sections, will not the result be the same? Suppose there were

<sup>3</sup> 10 millions of such molecules all multiple  
acid and a proportionate division of the Energy  
was made would there not be a proportionate  
division of the light and consequently the same  
aggregate Consumption of Energy and the same  
aggregate light, while the resistance would  
be reduced from 125 units to 125.000.000 the  
part of 1 unit or 1562,500,000,000,000 times  
less than the present resistance. This is of  
course assuming that in this division no  
variation of the radiating Surface would be  
had. The resistance of one of these molecules  
of carbon is greater than the resistance of a  
molecule of copper for instance, this difference  
of resistance of the molecules of different  
matter is one of the factors determining the  
difference of Conductivity of materials, the other  
factor being the density of their mass. In  
this respect resistance is a factor in  
determining the Economical Conversion  
of Energy into light but this is the difference  
of resistance existing in different materials

4 and has nothing whiter to do with  
the question of resistance as between  
a greater or less body of a material  
of one kind

I am  
Very Truly Yours  
(Sgd) Edward H Johnson  
Manager

21 Dec 1

My Dear Howard

Regarding your cable about 250 third lamps and I saw what would be the chances as to passing making an arrangement in England. I knew the economy business would come to the fore and therefore I immediately went to New York and devoted myself to the production of a high resistance lamp. I have made two or three of them 250 ohms which work fairly but I think the life is not more than two hundred hours. I had probably be able in the course of three or four weeks (the Hochstadt being delayed me) we closed down the two weeks to get the life up to 600 hours and 11 on 13 p.m. Now I have made one it could be lamps. I am going to keep and make them so excited and still have 250 ohms resistance as I have the two candle per piece about 18 of the standard will be the equivalent of a 250 watt lamp. I have in the City of London he said I found that my candle in the same as the candle.

47  
oft. of gas which should give sixteen  
candles does not give eight candles  
at 50 mph. with a new lamp and  
in the lamp of an expected sixteen  
candles can be obtained. I therefore  
hope and believe that I shall be  
able to get 19 lights of ten candles  
each 250 hours service at a cost of  
one hundred thousand pounds which means  
we can sell right at 35 cents and  
make a profit of ten to fifteen per  
cent on the money actually invested &  
I am not mistaken as to prices of  
material and labor there. But perhaps  
we shall not be required to sell  
it so low as I can sell for  
the 50 candle power, which gives  
about 12 effective or sold, the loss  
of course you cannot expect to  
make an undeniably good showing  
in the first trial. The gas will  
have the disadvantage of having to  
work up green men & there will  
be considerable initial cost and  
recognition expenses which being charged  
to one station instead of to a  
great number which will bring the  
investment up but I have only  
seen of a small station. But  
for I could be kept at twenty

22  
7  
stated that we shall be very much  
better off, we had fifteen stations the  
London Gas Companies could not  
sell gas for 80 cents but would be  
willing to sell it for about 82.50  
per 1000 on account of the low price  
and said as I had previously explained  
the London Gas Companies the  
public understand, pay 14 1/2% but  
if you took at their statement  
you will find that most of their  
capital is in securities, bonds which  
only pay 5%. If we were allowed  
to have a position of our  
investment at 5% and repurchased  
the whole position by stock then  
the 14 1/2% to 18 1/2% would be greatly  
increased.

Mr. Stated came home back on  
Monday, you'd see small figures  
in the paper. I suppose you would intend to  
use them on the electric but I changed  
my mind on account of a mass of new  
papers in a pyramid as well.  
I do not say anything about  
matters but I have received fifty  
pounds debt will go over to you  
with them any time as they are  
ready to cash a man for you to  
deal with them.

This matter however is really striking  
we should know what size matters  
you want we only make matters  
which will answer for one light  
up to twenty, the intell, & if it is  
absolutely essential you can  
make one stand twenty & fifty, also  
a person has 100 lights two fifty  
light meters can be used.

We have just got a safety catch  
to be placed on the dynamo in  
the main circuit. Perhaps you would  
like some.

You have not told us how you  
like the new socket and the tip of  
the lamp. We have no more trouble  
from this cause so far.

It would be well for you to have  
in your Holborn Studio, a two  
light gas meter and to have a room  
put it up so that you can conduct  
different businesses and then get them  
checked papers and at the same  
time ascertain their cubic feet.  
You may be considered by this  
and it will aid you in your  
explanations. You should get a meter  
called I think, Common's and you  
has them. It is about 1/2 in thick can  
hang & slip in wood & has a yellow



paper. It gives some very valuable  
information and is exceedingly plain.  
It illustrates the use of gas jets, the  
candle power and the amount of gas  
used and tells some things against the  
gas lamp, although, considering it  
a gas man. It absolutely asserts that  
in the City of London the average amount  
of candle power obtained for 8 ft of  
candle gas does not exceed  
seven candles and I can readily believe  
this as you will remember our test  
at Beermanns on Metropolitan gas  
(21 candle power) The highest was eleven  
candles burning six feet of gas  
and the lowest one was seven and  
burned more using seven feet and  
only gave 11 1/2 candles. There is explained  
in the fact that if you have a jet of gas  
a certain opening and a certain  
pressure of gas and both remain  
relative to each other, five feet of  
gas gives increasing the pressure  
so as to give eight feet will cause  
burn sufficient to set upon the flame  
like a Bunsen burner & reduce the  
candle power down as low as five.  
In six candles although the gas consumption  
is increased from five to eight feet.  
If the jet gets inclosed as it does after

6  
the candle burning, and gradually gets  
warmer, the pressure remaining constant  
the amount of gas will be reduced from  
four feet to perhaps 2 1/2 ft but it will  
blow, or ~~not~~ this burner burns better  
the candle power will go down to  
4 or 5 candles. But if it be an ~~open~~  
jet the ~~valve~~ hole will be increased  
from oxidation and the pressure  
remaining constant it will consume  
more gas and the candle power  
will be reduced by lack of oxygen  
as it was decreased by increased  
oxygen. Now the pressure constant  
varies slightly in the mains but  
greatly within the house. This great  
fall of pressure and change of pressure  
in the house is due to the ~~incompetence~~  
permission of the Gas Companies ~~not~~  
the public to get their own gas fitting  
done by anybody. The consequence  
is that competition has caused the  
introduction of pipes incapable of  
carrying the gas throughout the  
building without great loss of pressure.  
Now as the jet will vary in candle  
power throughout the building.

Another thing the larger the  
flame the greater the economy as the  
heated body is more compact and

2/  
the total surface <sup>of the jet</sup> exposed to the air  
is small but when the jet is steady  
the total surface if the jet exposed  
to the air is increased but and also  
not only increases the diameter of the  
flame but increases the velocity  
of the flow and both tend to reduce  
the candle power. In fact the  
distribution of gas is in practice  
a very difficult matter and the  
talk of the gas people about candle  
power is all nonsense. Were it possible  
to make burners that would never  
degrade & that the pressure in  
every part of a city and house was  
constant this gas distribution would  
be perfect but a new burner will  
degrade from the very moment it  
is put in and in three weeks it  
will not give near the result first  
obtained. A burner taken from one  
house in which say ten candles  
were obtained from five feet of gas  
would if taken to another house  
give entirely different results as  
the pressure might be different in  
the other house and as the absolute  
definite relation between the size  
of the orifice and the pressure to obtain  
the best result. You can see that there

8

conditions are utterly unattainable  
in practice.

It perhaps might be a good  
idea to keep your eye out on some  
square mile in London in which  
there is a slum near the center  
in which we could obtain a healthy  
sheep and if you decide on a doctor  
it might be well to hire a car  
to obtain statistics. We can  
balance you the found of books  
from which you can get up what  
you require.

Putting in this Central Station  
will be very much easier than I  
at first imagined. The men are easily  
broken in at laying tubes and the  
more I keep at it the more I am  
convinced that it is much easier to  
put in a Central station. I suppose  
a square mile station to put in  
10 small dynamo boilers to operate  
a mill.

I suppose in going over from  
one machine to another at Kilsnash  
without you will stop one dead  
and then start the other and have  
no special appliances to take the  
current off and to put it in the  
other. I don't want any more than a

9

momentary interruption but as it will  
occur so seldom I do not suppose  
you will want anything special.

When you first start up it  
would be a good idea to have an  
ice box and keep ice on hand until  
your bearings get worn down.

Since you would have sent me  
a tabulated statement of prices  
of following:-

Steam coal, Gas coal, Peat coal,  
Buckwheat coal & Coal dust.

(Delivered in London & at the port wharf  
& the cheapest method of transportation)  
Rail freight in London (this  
should be no occasion)

Gas Pipes

Road Iron

Cast Iron

Iron Fittings

Angle Iron the same as on the  
elevated Rail Road structure

Day labourers

Firemen

Ordinary Gas Engineers

Draftsmen

Carpenters

Masons

N. 10 98% conductivity with insulation  
& covered

10  
I spare lists of everything you  
think would assist me in calculating  
I should also like to be posted  
on mechanical & General laws on  
Steam Engines & Boilers & electric  
machines.

I called you the other day  
to get an article from El Nuevo  
Cienciero which is to be found in the  
British Museum. The magazine was  
for 1874. My impression is that  
Paccinotti published in El Nuevo  
Cienciero in '74 or '75 a dynamo  
machine in which the field magnet  
was revolved around the commutator  
brushes the same as with our  
Dynamo. In fact I saw the article  
the other day in the Electrician or  
La Lumiere Electrique or Telegraphic  
Journal which stated that Paccinotti  
published such an article in 1874  
in El Nuevo Cienciero.

Yours very truly

Thos A Edison

# EDISON'S ELECTRIC LIGHT.

|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |

## SCHEDULE OF VALUATION

most are observed over an extended period of time, and are usually accompanied by other symptoms, such as

only to be measured with reference to units used by different groups of people, and different groups of people may use different units. The units used by the different groups may be related to each other, but they may not be. For example, the units used by the different groups may be related to each other, but they may not be. For example, the units used by the different groups may be related to each other, but they may not be.

WATERHOUSE &amp; WINTERBOTHAM.

1, NEW COURT.

LINCOLN'S INN.

Printers: Sir Joseph Causton & Sons, London.

# 2<sup>nd</sup> Agreement

dated the \_\_\_\_\_ day of \_\_\_\_\_ 188\_\_\_\_\_ and made

Between THOMAS ALVA EDISON of Maple Park, New Jersey,  
U. S. A. of the first part DREXEL MORGAN AND COMPANY of  
New York, U. S. A. of the second part, EUGENE PAOLO FABRE  
of New York, Edward \_\_\_\_\_ and GROSSVENDOR PORTER LOWEY  
also of New York, hereafter of the third part and THE RIGHT  
HONORABLE EDWARD ELEYDELL BUTVERIE and the other

persons whose names appear in the foot hereof opposite the number of shares  
to be subscribed for by them in the Company hereafter mentioned of the  
fourth part. ~~Edith~~ certifies the said Thomas Alva Edison is the owner of the  
Patents specified in the schedule hereof subject to certain rights hereof of  
the parties hereto of the second and third parts from it is hereby agreed

and Ratified by and between the parties hereto as follows that is to say

1. The parties hereto of the fourth part will subscribe for \_\_\_\_\_ shares of the Capital of the Company after the execution of this Agreement by the parties hereto of the first three parts from a Company to be registered under "The Companies Act 1862 to 1880" with limited liability by shares and to be called "The Edison Electric Light Company Limited" for the purpose (first) of purchasing and acquiring the said Patents and adapting the same to the use of the fourth part will subscribe for the number of A shares in the said Company opposite their names respectively and will not part with such shares or any of them until the first year after the formation of the Company. This Company shall commence its business immediately after its incorporation, and shall use the best means of its

2. The said Thomas Alva Edison shall have the right to sell or assign to any person or persons all or any part of his share in the said Company and will not part with such shares or any of them during the first year after the formation of the Company.

3. The Capital of the Company shall be £500,000 divided into 25,000 A Shares of £10 each and 25,000 B Shares of £10 each with power to increase the Capital beyond £500,000 and with power to issue any part of this increased Capital with such preference or priority as may be determined by the Company by Special Resolution. If the said company shall require to be increased by the Company by Special Resolution.

4. The yearly profits of the Company available for Dividend shall be apportioned

Firstly—In payment of a professional cumulative Dividend at the rate of 45 per centum on the amount, for the year ending on the 31<sup>st</sup> of December, of the profits of the Company, as paid up on the A shares.

Secondly—In payment of a Dividend part passu on the amounts paid up on the B shares, credited as paid up on the A and B shares.

In the event of the winding up of the Company the repayment of the amounts paid up on the A shares shall be paid up on the A shares with any arrears of the cumulative Dividend (amount) 45 per centum thereon shall have priority. Any further surplus of assets shall be distributed as over the A and B shares in proportion to the amount paid up or credited as paid up on the shares; the such surplus shall be distributed as to one-half among the A shares and the other half among the B shares; with the same amount shall be divided among A and B shares. The voting power shall be as follows:—Each A share shall have one vote and each B share shall have one vote.

6. The qualification for a Director, unless otherwise altered by special resolution shall be the holding of 500 A shares.

7. 20,000 A shares shall be first issued and actually numbered for within 21 days after the formation of the Company.

8. The said Thomas Alva Edison with the concurrence of the parties hereto of the second and third parts will sell and assign to the Company (1) the several Patents specified in the Schedule hereof being the whole of the Patents taken out by him or of his behalf in relation to the application of electricity or magnetism as a lighting heating and motive agent and (2) all electric lamps dynamo and other plant belonging to them or any of them now in Great Britain and used or capable of being used for the exhibition of the said Patents or the production of electric light and the lease of No. 57, Holborn Viaduct.

9. The Company shall be entitled without further payment than is hereinafter mentioned to all extensions of the said Patent rights and to all improvements upon or connected with the said inventions or the applications of the same which may be made by the said Thomas Alva Edison.

10. The consideration to be paid by the Company for the said Patents and plant shall be (First) the sum of £ \_\_\_\_\_ each to be paid to the parties hereto of the second



part and which shall be taken to represent the actual expenditure in England on the part of the parties hereto of the first three years of the business of the said patent business and lease up to this time. (Schedule) The amount of the said T. A. Edison of one fully-paid-up B share for every £10 of capital actually paid up in respect of A shares. Such allotment shall be made within one calendar month after the expiration of the year 1890 and the said contracts shall be from time to time executed by the Company in order to enable the said T. A. Edison to register the same prior to the issue of such B shares.

11. The said T. A. Edison will not, without the consent of the Company before the year 1890 part with one fully-paid-up B share which may be from time to time allotted to him and the Company may refuse to register any transfer of such shares excepted contrary to the clause.

12. The Company shall pay to the parties hereto of the second part on the execution and delivery to it of the necessary assignment or assignments of the said Patents the sum of £10,000 and also at that time or on the giving of the Certificate mentioned in clause 10 of the said Patent a further sum of £15,000 both of which sums shall be paid by way of dividend on account of Dividends on B shares.

13. The Certificate of one half of the B shares for the time being allotted to the said Thomas Alva Edison or his nominees shall be retained by the Company and no dividends shall be actually paid in respect of such one-half of the B shares until the dividends which would otherwise have been payable in respect thereof shall have made up the said sums of £10,000 and £15,000 so paid as aforesaid interest being computed on the receipt of the said £10,000 and £15,000 per annum with yearly compounding and the said sums shall not be paid until the said sums have been made up.

14. In no event shall any claim be made against any of the parties hereto of the said first three parts for the return of any part of the said sums of £10,000 and £15,000 or any interest thereon but the said sums when repaid or satisfied by the means aforesaid shall not be deemed income of the Company.

15. The Company will grant to the said Thomas Alva Edison or his nominees free and exclusive licenses to use all, or any of the said Patents or any improvements for the purpose of incorporation, only on patents or trademarks or on common roads. And every such license shall contain such negative and other conditions as the Company may from time to time require or proper for protecting the said T. A. Edison or his nominees in the enjoyment of such free and exclusive licenses.

16. The said Thomas Alva Edison will from time to time, with all reasonable despatch supply to the Company all the prices charged by him to his most favored customer (such prices not to exceed the actual cost of the materials and labour with an addition of 1 per cent. for superintendence, general charges and profit) all such electric lamps, dynamos and other plant as shall be required by the Company for the purpose of their operations. All such lamps, dynamos and plant to be delivered to the order of their Company at the place of manufacture and to be paid for in cash and the equivalent of the price of the said T. A. Edison as the agent and to be paid for at the choice of the Company. But the Company shall not be bound to purchase from the said Thomas Alva Edison more than one month after the incorporation, purchase of the said Thomas A. Edison electric lamps, dynamos and other plant to the extent of £250,000, all the said plant to be used in respect of the said Edison's patents.

17. Notwithstanding any of the provisions hereinbefore contained there shall not be any obligation on the part of the Company to pay the said sum of £15,000 or any part thereof unless and until it shall have been certified by Sir William Thomson and Sir Frederick Joseph Bramwell whose Certificate shall be countersigned by Messrs. Price Waterhouse and Company Public Accountants that electric light can be produced and distributed by means or with the aid of all or any of the processes covered by the said Patents at a cost not greater than the cost of the production and distribution of gas in London, allowing an annual return of 10 per cent. Provided always that the formation of the Company, and the assignment of the Business of the said Edison to the Company, shall not be delayed till such Certificate has been given.

18. If the Company shall not be incorporated within the said period of two calendar months or if the first issue of A shares shall not be actually subscribed for within the said period of 21 days then and in either of such cases this Agreement and everything herein contained shall be void.

19. The said parties hereto shall at the expense of the Company enter into and execute and procure the execution by all other proper parties of all such indentures and agreements as may be necessary to give full effect to the provisions of these presents and in the event of any difference as to what shall be contained in such further deeds and agreements or in reference to the carrying into effect of any clause of these presents the same shall be referred to the decision of two or more responsible persons to be appointed in the usual way one by each of the parties to the difference or their umpire.

in witness whereof the said parties to these presents have herunto set their hands the day and year first above written.

| Year. | Issue.        | Is Yellow Blank | No. of | Date.         | Is Yellow Blank |
|-------|---------------|-----------------|--------|---------------|-----------------|
| 4926  | Oct. 23, 1876 | "               | 51     | Nov. 11, 1881 | "               |
| 4928  | " Nov. 7      | " E. O. Bowers  | 22     | 1880          | "               |
| 4929  | " Dec. 5      | " E. O. Bowers  | 23     | 1880          | "               |
| 5006  | " Dec. 26 "   | " T. A. Bowers  | 25     | 1880          | "               |
| 4976  | "             | "               | 26     | April 25 "    | "               |
| 4978  | "             | "               | 27     | 1881          | "               |
| 5004  | Nov. 11, 1876 | "               | 24     | 1914          | "               |
| 5127  | " Dec. 15 "   | "               | 28     | 1945          | "               |
| 33    | Jan. 5, 1880  | "               | 29     | May 4 "       | "               |
| 578   | " Feb. 10 "   | "               | 30     | May 4 "       | "               |
| 4702  | " Feb. 11 "   | "               | 29     | May 6 "       | "               |
| 1302  | " Feb. 11 "   | "               | 27     | June 8 "      | "               |
| 3765  | " Feb. 11 "   | "               | 28     | 2465          | "               |
| 3880  | " Feb. 24 "   | "               | 30     | 3545          | "               |
| 3881  | " Feb. 24 "   | "               | 29     | 3541          | "               |
| 3884  | " Feb. 24 "   | " E. O. Bowers  | 30     | May 23 "      | "               |
| 3884  | " Feb. 24 "   | " P. J. Jernick | 31     | May 11 "      | "               |
| 3964  | " Feb. 24 "   | "               | 32     | 3922          | "               |
| 4301  | " Oct. 27 "   | "               | 33     | 3922          | "               |
| 4302  | " Oct. 27 "   | "               | 34     | Sept. 17 "    | "               |
| 4303  | " Oct. 27 "   | "               | 35     | Oct. 27 "     | "               |
| 4462  | " Oct. 28 "   | " E. O. Bowers  | 36     | 4462          | "               |
| 4463  | " Oct. 28 "   | "               | 37     | 4463          | "               |
| 768   | " Feb. 23 "   | " E. O. Bowers  | 38     | Oct. 18 "     | "               |
| 769   | " Feb. 23 "   | "               | 39     | Oct. 18 "     | "               |
| 772   | " Feb. 23 "   | "               | 40     | 4676          | "               |
| 792   | " Feb. 23 "   | "               | 41     | Oct. 19 "     | "               |
| 814   | " March 9 "   | " E. O. Bowers  | 42     |               | "               |
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1. *Wang et al.*

Revised: 2013-01-15

No. of Shares.

**1881. Electric Light - Puskas & Saportas (D-81-034)**

This folder contains correspondence and other documents relating to the business of Puskas & Saportas, a stock-trading company organized about 1879 by two associates of Edison, Theodore Puskas and Edward W. Saportas. Puskas & Saportas specialized in buying and selling the stocks of the various Edison electric light companies.

All the documents have been filmed.

No 3

New York 5-

L. A. Edison

will be out tomorrow  
might important to see  
you will you be lit up

14 paid M. O. W. Saportas

5:40 pm Su

E. W. Saporas  
N. Y.

Jan 5/81

P. Edison  
Received



40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1060 1061 1062

ROOM 12

E. W. SAPORTAS.

New York, Feb'y 12<sup>th</sup> 1881

A. A. Edison, Esq.  
Menlo Park, N. J.

Dear Sir,  
As understood between us on Thursday evening, we now beg to give you order for an electric lighting machine capable of demonstrating the system practically at the Palais Royal, Paris. Said machine to be of the capacity of 1000 incandescent candle power lamps with everything complete meters etc, and to cost about \$5000. To be ready for delivery to ~~us~~ so that it may reach and be working in Paris by the 30th of May next.

Do we understand that the  
wires are included in the cost of \$1000  
or thereabouts. It has suggested itself  
to me that a substitute machine might

THEODORE PUSKAS.

PUSKAS & SAPORTAS,  
2 NASSAU STREET,  
ROOM 12,

E. W. SAPORTAS.

2.

*file*  
*under*

*New York*  
*European Electric Light Co 188*

be sent with the lamp in case of accident  
but on this point you are better calculated  
to decide than ourselves

Will you kindly confirm the  
proposed price put me in a position  
to answer the following cable:

"Give order and advise if sure  
for May 30th."

Yours very truly,  
*Puskas Saportas.*



E. W. SAPORTAS

Thos. A Edison Esq<sup>r</sup>

Dear Sir,  
I have seen Mr. Serrell who  
is authorized to act in the matter  
of making for patent, royal, and who  
fully confirms your acceptance of the  
order. He requested me to see Mr. Serrell  
in regard to obtaining necessary protection  
for invention upon introduction into France.  
I have done this and reported to Mr. Serrell  
who is satisfied.

Will you kindly inform me what dynamo machine you intend to send to Paris so that I may instruct Serrell to have his agent in Paris obtain the necessary passing and formal oblige.

Yours truly,

Discaportus

THEODORE PUSKAS.

PUSKAS & SAPORTAS,  
2 NASSAU STREET,  
ROOM 12.

E. W. SAPORTAS.

New York, July 16<sup>th</sup> 1884.

My dear Mr Edison,

Mr Bauer says he is fully authorized to give the order for you to go ahead on the machine but that the money must first be put up here with Deaill Morgan & Co. and that he must have a written communication from you as to about how much it will cost. We are perfectly willing to put the money up and I wish you would just drop him a line as to cost. I will attend to the rest. Enclose your note to him in this. Your answer to me. Puskas cables:

"See whether Edison authorizes securing space  
"in exposition électrique for his inventions  
"generally, and for light in connection with  
"palais royal answer quick informs him French  
"telephone shares are 20% premium."

THEODORE PUSKAS.

PUSKAS & SAPORTAS,  
2 NASSAU STREET,  
ROOM 12,

E. W. SAPORTAS.

2.

New York, ..... 188

Please let me hear from you on this

also.

My dear Mr. Edison,  
I have just learned about the Central Edison  
Co. etc. etc. which you spoke this morning  
and am to see him again this afternoon.  
Yours truly,  
E. W. Saportas.

THEODORE PUSKAS.

PUSKAS & SAPORTAS,  
2 NASSAU STREET,

ROOM 12,

E. W. SAPORTAS.

*OK.*  
New York, Feb. 17<sup>th</sup> 1881

My dear Mr Edison,

Mr Baucker says he is fully authorized to give the order for you to go ahead on the machine but that the money must first be put up here with Dress Morgue & Co and that he must have a written communication from you as to about how much the estimate is. We are perfectly willing to put the money up and I wish you would just drop him a line as to cost. I will attend to the rest. Enclose your note to him in your answer to me. PusKas cables.

See whether Edison authorizes securing space in "exposition électrique" for his "inventions generally and for light in connection with palai royal, answer quick inform him french telephone shares are 20% premium Please let me hear from you Edison

THEODORE PUSKAS.

PUSKAS & SAPORTAS,  
2 NASSAU STREET,  
ROOM 12,

E. W. SAPORTAS.

New York, March 11 1881

My dear Mr. Edison,

I enclose the money for  
the share of stock. I send it in this shape because  
I presume you keep your account at Drexel  
Morgan, and if you should deposit our check  
there they would know you had sold a  
share, and if they or the public get the idea  
you are selling, the market would drop  
on us like a thousand of bricks. So "mum's  
the word". because a story is always magnified  
and this 1 share would very likely be reported  
as 10 or 100 before night.

Please sign enclosed & return

yours sincerely with thanks  
E. W. Saportas

[ENCLOSURE]

THEODORE PUSKAS.

PUSKAS & SAPORTAS,  
2 NASSAU STREET,  
ROOM 12,

E. W. SAPORTAS.

New York, ~~March~~ <sup>24</sup> 1881

This is to certify that Puskas  
and Saportas have bought one  
Share of <sup>Edison</sup> Electric Light <sup>stock</sup> from me  
for \$525, receipt whereof is hereby  
acknowledged, and that they can  
call upon me for said share anytime  
from date upon surrender of this certificate

  
Thos A Edison

## MEMORANDUM.

FROM

PUSKAS &amp; SAFORTA'S,

2 NASSAU STREET,

COR. WALL ST.

NEW YORK.

TO

*Hymel* 1881  
*S. A. Edison*  
*65 5 Ave*

Dear Sir,  
 Please deliver 3 shares  
 to bearer against receipt and check  
 enclosed and oblige

Yours truly,  
*J. A. Sforta*

T. A. EDISON.  
 65 Fifth Avenue.

New York, 8<sup>th</sup> March 1881

Received of Thomas A.  
 Edison three shares  
 of stock of the Edison  
 Electric Light Company  
 Certificates Nos 1068/70  
*J. A. Sforta*

THEODORE PUSKAS.

PUSKAS & SAFORTAS.

E. W. SAFORTAS.

2 NASSAU STREET,

ROOM 12.

New York, March 16<sup>th</sup> 1881

My dear Mr Edison,

Enclosed please find  
check for 3125 in payment for 2  
shares of stock. I found that my  
brother to make the trade sold it at  
158 $\frac{7}{8}$  in order to make the trade  
go through less  $\frac{1}{2}$  25 commission to us  
leaves 156 $\frac{2}{3}$  or 3125 for the  
two. Rabbi is not in town today  
and I will see you this afternoon  
and call on him this evening.

Please deliver stock to Beaver

E. W. Safortas

The call at the running board was  
a fiasco - 1450 bid for 10 shares in the



a friend - 1420 and for 10 years  
 The call will be coming from you  
 Please acknowledge the letter  
 and call on him this evening  
 and I will see you this afternoon  
 1881. He has a suit in town today  
 Give 1881 to 3125 for the  
 2  
 of Chicago for 2500 commission to us  
 1881 in order to send to the bank  
 brother to send the bank note of at  
 shares of stock. I found that very  
 check for 3125 in payment for 2  
 and to come here and buy it from  
 me at 1587 1/2  
 Room 15  
 3 NASSAU STREET  
 FRANKS & SARGENT  
 1881

## MEMORANDUM.

FROM

PUSKAS &amp; SAPORTAS,

2 NASSAU STREET,

COR. WALL ST.

NEW YORK.

TO

*Approved*  
*Am. Anti-Sl. Soc.*  
*65 5th Ave*

My dear Insull,

Please let me know  
 as soon as you get word about  
 Bachelors' illuminating Stove, and  
 if he says to sell it, put it in shape  
 to sell. Goddard will show you how  
 it is done,  
 yours  
*Saportas*

Thodore Puskas.

E. W. Saporas.

**Puskas and Saporas,**

2 BASSRU STREET, COR. WALL,  
47 WILLIAM STREET.

New York May 9<sup>th</sup> 1881.

My dear Mr Edison

So far I have found it impossible to get a bid on any stock of Illuminating. I have only sold about 55 Shares in lots of 3, 5 etc varying in prices from 1% to 54%. As regards Batchelor's stock, of course it is desirable to get some profit for him, but I do not see how I can ~~work it out~~. I would take it myself but have locked up quite a little money in the Parent Company stock, and I do not like to assume an obligation that I might fail to carry out. I have managed so far to stem the tide, but everything is

*Theodore Tuskas.*

**Tuskas and Saportas,**

*C. M. Saportas.*

2 BASSAU STREET, COR. WALL,  
47 WILLIAM STREET.

**New York.**

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My dull and I understand this  
morning that I can buy stock at  
100. But good times are coming, and  
all we have to do is to hang on. If you  
have anything to suggest in regard to  
the Patchell stock let me hear from  
you. I will do all I can for you and  
your associates leaving my own interest  
out of the question.

Yours faithfully,

*C. M. Saportas.*

T. A. Edison & Co.

Presidents.

## MEMORANDUM.

FROM

PUSKAS &amp; SAPORTAS,

47 WILLIAM STREET,

NEW YORK.

TO

*Lymay*<sup>1887</sup>  
*J. A. Edison*  
*65 E. Ave*

My dear Sir,  
 I spoke to Mr. Grueel this morning about the arrangement I thought I could make for the Batschelor Stock viz. that some friends of mine would pay 1% premium and give me a share in the profit if I would peddle it out at a profit. Now I am ready to turn the arrangement over to you for Batschelor.

## MEMORANDUM.

FROM

PUSKAS &amp; SAPORTAS,

47 WILLIAM STREET.

NEW YORK.

TO

188

account, and he shall stand in my place  
as regards profits, and I will further  
undertake to sell the stock. This is  
one proposition.

Since seeing Dr. Bull, I have been at  
the telephone making and saw Baileys  
and spoke to him about it. He  
says he could arrange with the

## MEMORANDUM.

FROM

PUSKAS &amp; SAPORTAS,

47 WILLIAM STREET.

NEW YORK.

TO

188

Executive Committee to protect  
Batchelor's interest and that he  
would do it. You can now see  
Mr. Baileys and chose between the  
two arrangements. I have no choice  
either way. The best for yourself  
and the company is the best for me.

Yours faithfully  
E. Saportas

I leave everything  
to Russell - The  
Co wants the library  
immediately

Electro  
Light  
Acupuncture  
Saportas  
May 10th 81  
As to Patching  
Illuminating  
Stool





## MEMORANDUM.

FROM

PUSKAS &amp; SAPORTAS,

47 WILLIAM STREET.

NEW YORK.

TO

May 14<sup>th</sup> 1881

My dear Mr. Insull.

Enclosed please find the statement which I called to hand you this morning, but was told you were out. My brother is out of town and I will hand him your letter this evening.

Yours truly,

Puskas &amp; Saportas

## MEMORANDUM.

FROM

PUSKAS &amp; SAPORTAS,

47 WILLIAM STREET.

NEW YORK.

TO

May 14<sup>th</sup> 1881.

Statement of Edison Electric Light  
stock bought of P. & A. Edison Esq.

|            |   |        |                      |                 |
|------------|---|--------|----------------------|-----------------|
| March 3/81 | 1 | Edison | @ 1525               | = 1525 —        |
| " 5/11     | 1 | do     | @ 1550               | = 1550 —        |
| " 16/81    | 2 | do     | @ 1562 <sup>22</sup> | = 3125 —        |
| " 28/81    | 2 | do     | @ 1545               | = 3150 —        |
|            |   |        |                      | <u>\$9350 —</u> |

## MEMORANDUM.

FROM

PUSKAS & SAPORTAS,  
47 WILLIAM STREET.

NEW YORK.

TO

*My May 10<sup>th</sup> 1881.*  
*Genl. Insull* *12*  
*65 5<sup>th</sup> Ave.*

Dear Sir,

It has been stated to me that some of Mr Edison's Illuminating Stock is offered on the street at 10%. I can hardly credit the rumor as it would be very unfair to us if such were the case. My plan has been to make in a few instances a good premium for the stock and then create a general demand through advertising etc. which I have done at some expense to ourselves.

## MEMORANDUM.

2  
PUSKASPUSKAS & SAPORTAS,  
47 WILLIAM STREET.

NEW YORK.

TO

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It is not to be presumed that the stock can be sold at the figure we arranged in one day or before it becomes Rumor. I have numerous applications for it likely to lead to business. But I will go no further in the matter if the statement is not contradicted by yourself. My method of transacting business in connection with Mr Edison's stock has always been to

## MEMORANDUM.

FROM

PUSKAS &amp; SAPORTAS,

47 WILLIAM STREET.

NEW YORK.

TO

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appreciate not to depress, as no people  
 go in and buy on a falling market.  
 I have done my utmost to buoy up the temporary  
 decline but have met with no assistance  
 and for the present am lying on my oars.  
 I should be pleased however to hear from  
 you that the rumor is without foundation.  
 Do not misunderstand me as wishing to  
 monopolize, but merely as desiring to have

## MEMORANDUM.

FROM

PUSKAS &amp; SAPORTAS,

47 WILLIAM STREET.

NEW YORK.

TO

189

the same advantages as others, and not  
 to be represented as giving quotations which  
 are not correct.

Yours very sincerely,  
*[Signature]*

Theodore Puskas.

E. M. Saportas.

Puskas and Saportas,

~~2 BASSO STREET COR. WALL~~

47 WILLIAM STREET.

New York

1887.

My dear Mr Edison,

Mr S. P. Dimpfel  
representing my partner's desires of  
buying stock ~~will~~ call to-night.  
Please give him a good show. Mr  
Kenzie will introduce him to you.  
Do not let him speak about stock  
to any one and I will share  
the trade through.

~~Yours~~  
~~Saportas~~

THEODORE PUSKAS.

PUSKAS & SAPORTAS,

E. W. SAPORTAS.

~~NASSAU STREET,~~ 47 WILLIAM ST.,

New York, July 5th 1888.

My dear Mr. Editor,

I tried to find Miller  
today but he has gone off to get married  
and will be away three weeks. In the  
meantime I have written him a letter  
of which I enclose you copy which  
I hope will convince you of the  
Sincerity of my statements. I can  
say more but hope that in the  
Congress you will find that you  
have a faithful friend in

Yours Truly

*E. W. Saportas*

July 30th.

A. J. Miller Esq.

Bridgeport, Conn.

Dear Sir,

There seems to be an impression  
at Edison's mind in some incomplete  
moments derived from you that my position  
in regard to his light is an adverse one.  
As long as this exists it cannot but feel  
to working injury to me and all concerned.  
Edison especially does he seem to think  
that I have run down his light and  
put the "American" or "Moller" than  
you could ever have conveyed such an  
impression from to me impossible as you  
must well remember our conversation  
with Moller where I scolded Edison  
long and especially his system and  
ridiculed the idea of his having any  
light, and that with you alone afterwards.  
I make the remark that I believe the  
whole matter to be a fraud.

It would seem only just to me that  
 you should correct any impression of this  
 kind that Mr. Edin. may have derived  
 from any conversation with you. I tell  
 Mr. Edin. that if he ever writes to you  
 would correct him and that if you  
 misunderstood me which I cannot think  
 possible, you would put yourself right  
 with himself and myself. I think  
 you will do.

My word on Edin. matters is  
 in other & much more explanation, but  
 also words that do a great deal of  
 harm and I much lament, please  
 if you would drop Mr. Edin. a line  
 stating that I am all right and  
 advise me of the fact.

Saying that you are ever  
 a pleasant type

I am sincerely yours

*Edin. 10/10/10*

aug 1, 1981

Puskas

Paris,

1550  
650  
22  
21

You should absolutely  
withdraw your stock  
from Saportas and putting  
put it in ~~the hands of~~  
reputable firms ~~hands~~  
~~degenerating into~~  
~~first class~~ This  
action ~~is~~ exceedingly  
displeasing ~~to me and~~  
\* loses to you financially ~~and~~  
Eason



we must raise at least  
\$5000 tomorrow morning

10/2/29  
10/2/29  
10/2/29

aug. 1, 1881

Puskas,

Paris

~~your man~~

Saportas is deceiving you  
and sacrificing your  
stock I advise you  
put it in better hands

Edison

## PUSKAS & SAPORTAS,

47 WILLIAM STREET,

(ROOMS 40 & 41.)

New York, November 9th, 1881.

We have for two years past made a speciality of dealing in, and buying and selling on commission, the stocks of the various companies organized under Mr. Edison's patents for electric lighting. We have no official connection with the Company, and our views are governed by entirely unprejudiced investigation of the Edison system of lighting as compared with gas and other electric lighting systems.

Under the Edison patent three Companies are now organized—

- 1st. THE EDISON ELECTRIC LIGHT COMPANY.
- 2d. THE EDISON ELECTRIC ILLUMINATING COMPANY OF NEW YORK.
- 3d. THE EDISON ELECTRIC LIGHT COMPANY OF EUROPE (Limited).

1st. THE EDISON ELECTRIC LIGHT COMPANY is the original Company, with a capital of \$480,000—4,800 shares of \$100 each. The capital was originally \$300,000, but was increased to \$480,000 by an assessment on the stockholders of \$60 per share for each share of their holding, which money was required to meet the expenses of the first experiments made by Mr. Edison at Menlo Park. The payment of this assessment was entirely optional with the stockholders, and was freely met by all, each one receiving in return for the \$60 paid in 6-10ths of a share of stock, or in other words stock at par. At the time of its issue the stock on the basis of \$480,000, sold in the market and is still selling at \$1,000 per share, so that each stockholder received for his \$60 what to-day is worth \$600.

We are very frequently asked: "Is not \$1,000 per share a very high price for a stock that has as yet paid no dividends?" We invariably answer, no, and give as our reasons, the following:

Mr. Edison's system of lighting is the only one which, in our judgment, has thus far shown any ability to successfully compete with gas on a large scale, as evidenced by the work being done by the EDISON ELECTRIC ILLUMINATING COMPANY OF NEW YORK, which will more fully appear under that head. Now what does successful competition with gas mean? It means that the money invested in gas alone in the United States is \$400,000,000; that the gas companies pay an average dividend on the above of 10 per cent. or \$40,000,000; that should the Edison Company only secure one-quarter of the \$400,000,000, or \$100,000,000, upon which it could pay 10 per cent., viz.: \$10,000,000, said \$10,000,000 would be divided between 4,800 shares, giving in round numbers a dividend of \$2,000 to the share. It is easily seen what the value of shares that will pay \$2,000 per annum is likely to be. We have only taken the field for the Edison light at one-quarter of gas, but when we say that the natural increase in gas lighting per annum is about \$9,000,000, and that the Electric light can be introduced in many places where gas would be out of the question, it will be readily seen that the prospects are far greater. We have also been frequently asked: "Why does the Edison Company not light up," and have answered: "The Company's first principle being competition with gas, and competition with gas being not the lighting up of one or two isolated places, where no competition could be shown, it has been decided that no attempt at isolation should be made in the City of New York," but for the purpose of this competition a Company was formed, which is:

2d. THE EDISON ELECTRIC ILLUMINATING COMPANY OF NEW YORK, capital \$1,000,000, which was organized for the purpose of lighting the City of New York, by Mr. Edison's system. The holders of the stock of the EDISON ELECTRIC LIGHT COMPANY were entitled to subscribe to the stock of the Illuminating Company at par, and did so subscribe, instalments of 60 per cent. having already been paid in. The subscribers to the first million having the right to subscribe at par to the next issue of stock required for additional districts to be lighted, and the subscribers to the last issue always having the right to subscribe at par for all additional issues, up to \$10,000,000, required for the City of New York. THE EDISON ELECTRIC LIGHT COMPANY receives from the above subscriptions 10 per cent. in cash and 25 per cent. in stock.

The Illuminating Company received from the City of New York the right to lay tubes underground, and this is now being done in the first district which extends from South Street, through Peck Slip and Spruce Street to Nassau, down Nassau to Wall, through Wall (east) to South, and embraces the territory bounded by these streets. The majority of gas consumers in the district have contracted with the Illuminating Company for the light, one consumer alone requiring 5,400 lamps in his building. Among the streets already tubed are Peck Slip, Spruce Street, William to Ann, Cliff Street, Pine Street and others. Over 1,300 buildings have been wired for the light and several consumers, who had not contracted with the Company, on seeing the rapid advance being made, have now sent in their applications for the light.

This is only one source of profit to the EDISON ELECTRIC LIGHT COMPANY, another being the sale of generators (dynamo-machines), lamps and all paraphernalia required for the complete development of the system. Companies are already forming, and individual applications are greater than the large works established by Mr. Edison are able to fill, for while the Company has objected to do any business on a small scale in the City of New York or other gas districts, yet it is selling its machines for isolated purposes as fast as they can be turned out.

3d. THE EDISON ELECTRIC LIGHT COMPANY OF EUROPE (Limited), capital \$2,000,000, controls the Edison patents for continental Europe.

In Paris Mr. Edison was awarded the highest diploma of honor for his lighting system, and obtained besides five gold medals. Several large syndicates have been formed in France for the purpose of lighting cities and for manufacturing generators, tubes and lamps.

We believe that the future of all of the above companies is very great, and will cheerfully furnish any information within our reach to our friends and the public.

PUSKAS & SAPORTAS,

NO. 47 WILLIAM STREET.

100  
New York  
New Office of Colverson & Reed,

32 PARK PLACE,

(Metropolitan Life Insurance Co.'s Building)

New York, December 6, 1881.

John G. Thompson

John W. Wells

Thomas A. Edison Esq.

Dear Sir:

Mr. E. M. Saprota has been credibly informed that two cables were sent from here to his father Mr. Saprota now in Paris signed in your name on the 1<sup>st</sup> of August and between the 1<sup>st</sup> and 6<sup>th</sup> of the same month. The first is as follows:

"Saprota Paris

Saprota is deceiving you and sacrificing your stock. Advise your put-in better hands."

The second reads as follows:

"Saprota - Paris

You should absolutely withdraw your stock from Saprota, putting it in reputable firm hands. His actions

exceedingly displeases me, and loses to you.

Edison"

It is possible that some one may have used your name and therefore Mr. Saprota has requested me to write and ask you for a denial or explanation.

Respectfully etc.

John Thompson

My dear Mr. Edison,

I have so-day sold for your  
account 1 share at 1550 less 25 commission—  
the market is weak the stock offering at 1500  
I will try to get a better price on the other three  
shares. I think there will be a better movement  
in a day or two

Saportas

THEODORE PUSKAS.

PUSKAS & SAPORTAS,  
2 NASSAU STREET,  
ROOM 12,

E. W. SAPORTAS.

New York, \_\_\_\_\_ 1888

My dear Mr. Edison,

I can get 1575 net  
to you for two shares will you  
let them go

Saportas

1881. Exhibitions - Paris Electrical Exhibition (D-81-035)

This folder contains correspondence, reports, and other documents relating to the Edison exhibit at the Paris Electrical Exhibition of 1881. Much of the correspondence is by Edison's associates, Joshua F. Bailey, Charles Batchelor, and Otto A. Moses. Some letters discuss Edison's competitors, particularly Hiram S. Maxim. Other material deals with the promotion of the Edison electric light system in Europe. Included also are lists of the equipment used in the exhibition, floor plans of the exhibit space, and a copy of the report by Theodore du Moncel on the Edison light. Related material can be found in D-81-027 (Electric Light - Edison Electric Light Company of Europe) and D-81-032 (Electric Light - Foreign - Europe).

Approximately 80 percent of the documents have been filmed. The following categories of documents have not been filmed: routine shipping lists; duplicate copies of selected documents.

6, Lombard Street, E.C.4.  
London. Apr 23<sup>rd</sup> 1881

J. Edison Esq.  
60, Fifth Avenue  
New York.

Dear Edison  
Paris Electrical  
Congress 1881

I have received  
the President's appointment  
as Honorary Commissioner  
to the above, and am  
being asked on all  
hands what Edison is  
going to show. I am  
glad to hear from  
Insull that you intend  
to come out in strong  
force. You cannot over-  
estimate the importance  
of this to yourself.  
I am also glad to hear  
that Johnson is going  
to take the chief in  
hand. When will he  
start. The preparations  
for the Exhibition are  
being made on a most

~~Electricity~~ what a  
hally it is that you  
cannot have your  
electrical railway there.  
Siemens will I shall  
have all the thunder  
in that connection!!

Yours faithfully  
Dictated by Col. Goursaud  
Cham



Blank No. 1.

## THE WESTERN UNION TELEGRAPH COMPANY

This Company TRANSMITS and DELIVERS messages only on condition, limited by law, that the sender has a sufficient quantity of money to pay for the same, and the Company will not be liable for service or charge in transmission or delivery of messages if the sender fails to pay for the same.

This message is an UNREPEATED MESSAGE delivered by request of the sender, under the conditions stated above.

A. R. BREWER, Secy.

7x5

NORVIN GREEN, President.

Dated

*Manchester via Montreal*

Received at

791 BROADWAY.

To

*Edison*

*65-5 Ave.*

READ THE NOTICE AT THE TOP.

*Passages taken weeks ago for twelfth changing difficult if absolutely necessary cable answer Manchester*

*Consider No Sig don't fail VSTH. 2 exp. on 12/11/05*

THIS TELEGRAM HAS JUST BEEN RECEIVED AT THE OFFICE IN

791 BROADWAY, near Tenth Street,

WHERE ANY REPLY SHOULD BE SENT.

Direct Wires.

Miscellaneous

Apr 26<sup>th</sup>

Cable Patents

States sail

May 12<sup>th</sup>

U. S. Commission to the  
Paris Electrical Exhibition of 1881.

Dept. of State, Washington D.C. 26, 1881.

Thomas A. Edison, Esq.,

65 Fifth Ave. New York.

Sir,

In response to inquiries in regard to the transportation of exhibits sent from this country to the Paris Electrical Exhibition of 1881, I have to state that, while no arrangement can be effected for the free transportation of articles by the only direct line of steamer between New York and Havre, it is probable that, through the courtesy of the agents of the Compagnie Generale Transatlantique, consignments through the United States Despatch Agent in New York, Mr. Radcliffe Baldwin, 53 Broadway will be received and transmitted in season at reduced rates. As the freightage room on this line of steamers is limited, it is desirable that shipments be delivered to Mr. Baldwin at an early date, to be forwarded as occasion offers, while none should be so delivered later than July 1<sup>st</sup>.

I am, very respectfully,

Robert R. Hitt  
Acting U. S. Comm'r Gen'l.

H.

Department of State.

Washington, April 27, 1881.

Thomas A. Edison, Esquire,

65 Fifth Avenue.

New York.

Sir:

I am informed by the Honorary Executive Commissioner of the United States to the Paris Electrical Exhibition, that your application for space has been filed with the French Commissioner General.

The French Commission will be ready to receive heavy machinery for installation at any time after May 1st. It is, therefore, desirable that it be sent forward as early as may be practicable.

Steam or other motors are not desired  
for

for exhibition, unless especially designed  
for the generation of dynamo- or magneto-  
electricity.

Exhibitors are requested to notify the  
undersigned as soon as possible of the number  
of packages in which they propose to ship  
their exhibits, in order that they may receive  
the proper official labels to be attached thereto.

At the time of shipment of their ex-  
hibits, they will also notify this Department,  
without delay, of the number, weights and  
contents of the packages, in order that proper  
advice may be given to the French author-  
ities in advance of their arrival.

I am, Sir,

Your obedient servant,

Robert R. Holt

Acting U. S. Commissioner.

T. A. EDISON.  
65 NINTH AVENUE.

Paris Exposed.

New York, 22nd May 1881

Monsieur Berge  
Commissaire General  
de l'Exposition Internationale  
d'Electricité

Sir  
Messrs Puckas & Bailey  
are hereby authorized  
by me to make all  
necessary arrangements  
in regard to space and  
position of apparatus  
at the Exposition Internationale  
to be held at Paris  
and to represent me  
generally in all matters  
relating to the same

Yours Charles Puckas  
assisted by Dr Otto A. Novak

will have charge of  
the working of the  
apparatus

I have the honor  
to remain, Sir  
Your obedient servant  
(Signed) Thomas A. Edison  
I

S. BERGMANN,

108-114 WOOSTER STREET.

MANUFACTURER OF

Hotel and House Annunciators and Electrical Apparatus of all kinds.

Edison's Inventions—Photographs, Telephones, Kinetographs, &c., &c.

NEW AND IMPROVED PRUD'HOMME BATTERIES A SPECIALTY.

New York, May 6<sup>th</sup> 1881  
M. Carman & Co.

Sir: Please look up your  
Stock of Perforating Paper - both  
for Roman Letter and Plain Cutouts.  
Also receiving paper for both and  
send me in as much as you  
can find - I want it for the  
Paris Exhibit - I enclose a piece  
of the right width for Roman  
Letter - The Perforating Paper is a  
Wood Paper & the receiving Paper  
is a heavier paper of regular  
rag composition - Martin will  
know one from the other - I want  
also the proper receipt for the  
receiving solution. Write me at  
once how far you can supply  
me  
Yours truly, E. Johnson

Receipt

- 1 of Dursleyman or P.V. (Red Panamir)  
1 H. Sack  
1 Gall. Water

Per. P.V. or

and 1 case of each

We can supply you with ~~folded~~ paper (glazed) and the receiving (paper) ~~the~~ paper. The paper is not very good. As regards the Rouman letter has been ~~there~~ of it.

I think you can get it of the Gold & Silver Telegraph Co. If I am not mistaken that is where it was used.

You will find that the same receiving does for both instruments.

Enclosed you will find samples of perforating & receiving paper.



[FROM CHARLES BATCHELOR?]

*Georges Berger,*  
*Commissaire Général*  
*du Congrès International des Electriciens*  
*et de l'Exposition Internationale d'Electricité.*

*2, rue Legendre*



*Antoine Breguet,*  
*Chef du service des Installations*  
*à l'Exposition Internationale d'Electricité*  
*et au Congrès des Electriciens.*

*4, Rue Perrault.*

May 26th, 1.

Chef du service des Installations à l'Exposition  
internationale d'Electricité et au Congrès des  
Electriciens.

4 Rue Perrault. Paris.

Dear Sir:

On my return I found as I expected Mr. Edison had  
done nothing about designating his space in the Exposition until  
he saw me. Having told him of the result of my conversation  
with you he addressed a letter to our Asst. Secy. of State, which  
in due course of time will probably be communicated to you from  
Washington.

I, however, take the liberty of sending you a copy of it in  
order that you may be promptly able to accomplish what the Secy.  
of State will request.

With many thanks for your courtesy, I am, dear Sir,

Very truly, yours,

May 20th, 1.

M. Antoine Bruguet,

Chef du service des Installations a l'Exposition  
internationale d'Electricite et au Congres des  
Electriciens.

4 Rue Perrault. Paris.

Dear Sir:

On my return I found as I expected Mr Edison had  
done nothing about designating his space in the Exposition until  
he saw me. Having told him of the result of my conversation  
with you he addressed a letter to our Asst. Secy. of State, which  
in due course of time will probably be communicated to you from  
Washington.

I, however, take the liberty of sending you a copy of it in  
order that you may be promptly able to accomplish what the Secy.  
of State will request.

With many thanks for your courtesy, I am, dear Sir,

Very truly, yours,

[ATTACHMENT]

[FROM CHARLES BATCHELOR?]

May 31st, 1.

Theodore Puskas, Esq.

45 Avenue de L'Opera, Paris.

Dear Sir:

On my return I informed Mr. Edison of the conversations I had with the chief of installation, Mr. Breguet, about obtaining the best locations in the Exposition building, for his exhibits. He decided to select the two rooms on the gallery to the right of the staircase, which will give us a space of 72 feet square, to be filled with a most elaborate collection of his inventions.

Mr. Edison addressed a letter to the Assistant Secretary of State, making a requisition for this, and also asking the privilege to light the space in the gallery occupied by the central room 72 x 72 feet, immediately at head of the staircase; the six rooms to the right, each 72 x 36 feet, and the six to the left of same size; also the staircase down to the doorway, and a few lamp-posts immediately outside. He will ~~also~~ have 1,000 lights to distribute in this area. He also enclosed a diagram of the Exposition Building and asked for a space 12 x 18 feet, with passage-way round on the ground floor, in which to operate his steam

[ATTACHMENT]

[FROM CHARLES BATCHELOR?]

dynamo.

The Ass't. Sec'y of State replied he will make every effort to secure it.

Will you confer with Mr. Breguet about this as soon as possible, and inform us by cable of the consummation of the matter?

At the same time, please let your Secretary accurately design the space allotted to us, and mail a plan as soon as practicable.

In the interim, will you be kind enough to exercise your taste in selecting about six elegant lamp-posts, to be placed in front of the Palais de l'Industrie, if we are permitted to do so?

Each will contain a group of six lights. As it will produce, perhaps, the first impression of our capacity for lighting--and as first impressions are most lasting--you see how much will devolve upon you.

I think every thing has wonderfully improved during my absence. The electric light is absolutely perfect. The lamps in our offices have been burning since they started, five and one half hours a night, for two months and not one lamp has broken.

Edison is well, and just as full of great ideas as ever.

Truly, yours,

[FROM CHARLES BATCHELOR]

June 10, 1881

Theodore Puskas Esq.,

45 Avenue de l'Opera,

Paris, France.

Dear Sir:

Our exhibit will consist of:--

1. 150 Horse-power Boiler.
2. Dynamo and Engine for 1000 lights.
1. Small dynamo.
1. 5 Horse-power motor with countershaft.
1. Sewing machine motor, and sewing machine.
1. Motor driving pump.
1. Motor and fan.
1. New principle dynamo.
1. Main current regulator and appliances.
1. Set of apparatus for measuring resistance of lamps.
1. Set apparatus for measuring economy of lamps.
1. Photometer and appliances.
- Lamps.
200. 3 light chandeliers.
100. 2 light chandeliers.

50. 1 light chandeliers.

50. Swing brackets for lamps.

100. Rigid brackets for lamps.

12. Regulator mowers for the light.

1. Motor by deposit.

Safety catches etc.

1. Private line Telegraphic printing system.

1. Stock quotation printing telegraph system.

1. Automatic fac-simile telegraph system.

2. Systems of Domestic Telegraphy.

1. Quadruplex system of telegraphy.

2. Duplex systems of telegraphy.

1. Automatic chemical Morse system of telegraphy.

1. Automatic " Roman letter system of telegraphy.

1. Motograph Telephone system.

1. Combination Telephone system.

1. Phonographic-Telephonic system.

1. Musical Telephone system.



New York, ..... 188

Samples of all pipes and service boxes used on the Edison system.

1. Mirror Webermeter.
1. Tasimeter and appliances.
1. Odorscope and appliances.
1. Resistance box for strong currents.
1. Thermo Galvanometer.
1. Current regulator, (fluid-bridge.)
1. Set Leyden jars with high vacuum.
1. Carbon resistance box.
1. Telegraphic carbon strip Relay.
1. " Motograph Relay.
1. " pressure Relay.
1. " expansion Relay.
1. Telephone repeater. 1. Telephone switch-board.
1. Set Electric Pens and duplicating presses.
1. Chalk battery.
1. Condenser in vacua.
1. Segar lighter.

1. Motograph gong.
1. Set apparatus for illustrating "Etheric Force."
1. Magnetic motograph.

A number of pieces of apparatus illustrating the different methods of increasing and decreasing the resistance of a closed circuit by carbon contact and illustrating the progress of the Edison telephone transmitter as universally used.

Cases of samples of Bamboos, Carbonized articles, processes of manufacture, etc etc etc.

Photographs, -- Books, etc etc etc.

Very respectfully yours,



Electrical Congress

Prof. Rankine

3909 Locust St.

Philadelphia June 10. 1881.

May, dear Edison:—

I am very much obliged for your letter of the 2d and am very glad to have the report I heard, positively contradicted. I have waited before replying, to see how I was coming out financially. I have made my collections pretty closely and I believe I shall be able now to get through without putting any of my friends to inconvenience. I feel very much indebted to you of course for your generous offer. At one time it looked as if I should have to ask some assistance from my friends in the way of a

loan; and then it was that I wrote to you. But I think you will appreciate the advantage of being independent in such a matter as this. I believe now I have money enough for Mrs. Barker and myself to go on and spend the summer pleasantly. You do not need to be told that I shall be glad to do for you in every way all that I can in Paris. Bachelor I know will give me every facility for showing your exhibits and proving to the scientific men there the high character of your inventions. If there are any special points you wish me to make, please send me a memorandum of them.

I was in hopes that I could have lighted my house with the Edison light before I went to the Electrical Congress because

I desired to say that my house here had been so lighted. But no wire has yet come for the conductors. And no suitable lamps, chandeliers, brackets, or fixture of any kind have appeared. Since I saw you I have been over the route more carefully and I think that by the way, before I have to go, it will take not less than 2000 feet of wire. I know however that you are expending just as that kind of getting your splendid collection of exhibits ready for Paris. As I am expiring not to have you put yourself to inconvenience on my account, if however you can and so wish, the wire are here ready to put it up.

It may be that I shall be in New York on Tuesday next and if so, I shall call to see you. I will let you know at what time to expect me.

I hear our friend Robinson is talking of casting his lot with you. I should be glad if he could make himself so useful to you as to secure for himself a permanent position.

Many thanks for the Latimer Clark cells you ordered made for me. I shall be glad to have them to standardize my condenser with.

If I do not see you again you have my best wishes for a pleasant summer.

Cordially yours George F. Barker.

Subject .....

In reply to yours of .....

WESTERN ELECTRIC MANUFACTURING CO.,

62-68 NEW CHURCH STREET,

NEW YORK.

P. O. BOX 1748

CHICAGO,  
100-101 North Dearborn.

JUNE 11, 1881

T. A. EDISON, ESQ.,

65 FIFTH AVENUE

NEW YORK

DEAR SIR:-----

WE WILL MAKE THE

TWO REED PENS THAT YOU WANT FOR THE PARIS

EXPOSITION, BUT SHALL NOT BE ABLE TO GET

THEM OUT UNDER A MONTH.

YOURS TRULY,

WESTERN ELECTRIC MFG.CO.



Nov 11

6, Lombard Street, E.C.  
London, June 14<sup>th</sup> 1889

Dear Sir, Tuesday last, Mr. Walker advised us of having received from the U.S. Com a letter enclosing one from you regarding exhibiting and lighting space in the Exposition, and offered to go with us, to call on Mr. Berger and express the strong official interest felt in your exhibition. Mr. Berger showed the most obliging disposition, but was embarrassed by the fact that the space referred to in your letter had been given to other exhibitors. He explained that at the time of Mr. Batchelor's visit the applications for space were so few that his main concern was how to fill it up, but that since that time the situation had entirely changed, and it had been found necessary to cut down exhibition and to refuse many applications altogether. Also your attention ~~at the time~~ is called to the fact that Mr. Parker took more space than your cable authorised him to take, and you cabled him that you would try to fill what he had taken. Under these circumstances Mr. Berger explained that it would not

2.  
be possible to consider the question of  
12 Salons out of a total of not even  
to you. But he proposed to apply to  
the Syndicate to give up to you for  
lighting, the grand staircase, and the  
space at the head of the staircase, and  
for exhibiting purposes, <sup>as well</sup> a part of the  
latter space,

Today M. Berger informs us  
that the Syndicate has given up  
to you the space desired as above,  
both for lighting and exhibition purposes.  
It is possible that the space now  
given for lighting will take up the  
whole of the lamps at your disposition  
but if not Mr Berger suggests that you  
might take one or two rooms of the  
Museum of Decorative Art, which adjoins  
your salon, and the lighting of which  
would form a most attractive exhibition

Enclosed herewith you will  
find ground plan of the floor allotted  
to the Exhibition which we explain  
perhaps unnecessarily to guard against  
error. The staircase comes up on each  
side the landing with an intermediate  
landing, the whole width occupied  
being 12 metres and the stairs  
themselves being 4 metres wide. On each  
side there are at the foot of the  
staircase at the intermediate landing  
and at the head of the staircase two  
marble pillars at both sides making  
twelve places in all for candelabras  
lighting the staircase. Also in face of

3

the landing on each side there are two  
pietals for candelabra, making in  
all 16. The Commission offers to  
furnish you with lamp posts for  
the Candelabra (if these will serve)  
from which the lamp fixtures will  
be removed and you can put in  
such and so many branches as  
you may see fit.

The landing itself as  
you will remark is 16 metres  
by 12 metres wide and it is 12  
metres from the floor to the  
ceiling. The measurement of the  
Salon accorded you is (the  
partition being removed) 24 metres  
by 16 metres and it is 7 1/2 metres  
high. The above is the space available  
for lighting and you will remark  
that you are in one case alongside  
of the "Inaxim" and in the other  
alongside of the "Iwan".

For exhibition you have the  
Salon 24 m x 16 m and a space  
say three <sup>or four</sup> feet wide by 16 metres  
long on the landing of the staircase.  
The vestibule at the foot of the  
staircase will be lighted by the  
syndicate but this will be quite

separated by <sup>4</sup>draperies at the foot of the staircase so as not to interfere with your light, and at the great space on the landing your neighbor will be the "proxim" from whom you are entirely cut off except for the communicating doorway.

Mr Berger suggested your putting up quadruplex on the space at head of staircase. You will select, bearing in mind that no machinery or heavy weights can be placed there, and that it is the most prominent place in the Exposition whether for lighting or exhibition purposes.

In the plan of the rez de chaussee is shown place for Dynamos & Boilers

Very respectfully Truly Yours

Purokas and Bailey.

Per Edm.

To J. A. Edison Esq  
65, 7th Avenue  
New York City N.Y.





[ENCLOSURE]

Plan der Rez-de-Charrière.

مجلس

and dynamo

*Paulsen Nord-Est.*

*Pavillon Nord-Ouest.*

Echelle de  $\frac{1}{10000}$ 

316 des Champs-Élysées.

[FROM CHARLES BATCHELOR?]

5-

NEW YORK, JUNE 14TH, 1881.

65 FIFTH AVE.

J.F.BAILEY, ESQ.

45 AVENUE DE L' OPERA

PARIS, FRANCE.

DEAR SIR:-

THIS WILL BE HANDED YOU BY MR.G.W.LITTELL, THE ENGINEER  
WHO GOES TO PARIS BY STEAMER AMERIQUE, ACCOMPANYING, AND IN CHARGE OF,  
THE BOILERS TO BE ERECTED FOR US BY THE BABCOCK & WILCOX COMPANY.

BY ADVISING AND ASSISTING HIM YOU WILL GREATLY OBLIGE,

VERY FAITHFULLY YOURS,

JUNE 14TH.

THEODORE PUSKAS, ESQ.

45 AVENUE DE L'OPERA

PARIS, FRANCE.

DEAR GIRL:-

THE BOILERS FOR OUR EXHIBIT WILL LEAVE TO-MORROW ON THE AMERIQUE ACCOMPANIED BY, AND IN CHARGE OF, MR. G. W. LITTELL, THE ENGINEER OF THE RADCOCK & WILCOX COMPANY. HE WILL ERECT THE BOILERS IN PARIS, THE SHIPMENT IS MADE FROM NEW YORK TO PARIS DIRECT SO THAT HE WILL HAVE NO TROUBLE IN MAKING TRANSFERS FROM SHIP TO RAIL. WHEN HE REACHES HAVRE HE WILL DISPATCH YOU TO MEET HIM AT THE DEPOT IN PARIS AS HE IS IGNORANT OF THE FRENCH LANGUAGE AND IS A STRANGER IN YOUR CITY. PLEASE SEE THAT HE IS COMFORTABLY PROVIDED FOR. ON THE 22ND, DR. MOSES AND MR. DEUBEL WILL LEAVE FOR HAVRE ON THE FRANCE. DR. MOSES WILL BE OUR PIONEER, AND IT IS HARDLY NECESSARY FOR ME TO ASK FOR HIM AT YOUR HANDS THE ATTENTION HE DESERVES. I WILL PUSH FORWARD ON THE 6TH OF JULY WITH THE GREAT BULK OF OUR EXHIBITS AND SEVEN OR EIGHT ASSISTANTS. AS I HAVE ALREADY WRITTEN AN INVENTORY I WILL NOT RECAPITULATE, BUT I MUST SAY THE MASS OF MATERIAL THAT WILL GO ALONG WILL ASTONISH EVERY ONE.

(from Charles Puskas)

The Edison Electric Illuminating  
Company of New York  
65 Fifth Avenue

New York June 21 1881

Mr. T. A. Edison

Present.

Sir

Please have thirty (30)  
dollars sent to my wife during  
my absence at the first of every  
month to address stated below  
and oblige

Yours truly  
Th. Seibel

Address

Mrs. Th. Seibel

Canton

Ohio

Copy

Edison Electric Light Co  
of Europe.

New York, June 24, 1881.

Estimated Cost of Exhibition of Electric  
Light at Paris. —

|   |  |                    |
|---|--|--------------------|
| June 24, 1881<br>Estimated cost of<br>Exhibition of Paris | Engine. . . . .  | \$ 2250. —         |
|   | Steel Plate. . . . .   | 650. —             |
|   | Dynamo. . . . .  | 7100. —            |
|   | Lamps. . . . .   | 2000. —            |
|   | Mains, Junction & Taper boxes. —   | 1300. —            |
|   | Chandeliers, Wall Brackets, Lining<br>Brackets, Sockets, Shades etc (as<br>per list herewith.) — | 5000. —            |
|   | Wire —   | 750. —             |
|   | Travelling expenses seven men —  | 600. —             |
|   | Estimated freight —  | 1000. —            |
|   | Miscellaneous Expenses. —  | 500. —             |
|   |  | <hr/> \$ 21,150. — |

The above estimate does not include any expenses  
in Paris, but includes only the expenses on this  
side of the water and travelling expenses of  
seven men to Paris. —

31 Boulevard Hausmann,

Paris, June 24th, 1881.

My dear Mr. Fabbri;

Some 10 days ago we cabled D.M.C. for the date of your intended departure from New York.--I was desirous that my reply to the Bailey paper of which Mr. Edison gave you a copy, should reach you before you leave and soon after my return to Paris, the cold spell has brought me a severe cold and sore throat, confining me at home & mostly in bed.-- I am all right again now and you will find enclosed the said reply, together with a requisite paper giving my surmises as to the motives, which, I think led to those accusations. Of this last paper you may make whatever use you may think proper.

I regret exceedingly that I could not more condense my reply, there is a vast difference between an accusation and an explanation, and my object was to relate what I considered the necessary circumstances to enable you and Mr. Edison to judge for yourselves, caring nothing for the opinion of the others.--

I look forward with much pleasure to your coming; and best wishes for a safe and pleasant trip for yourself and Mrs. Fabbri, who, I take it, will join you.-- I shall be absent from Paris for the month of August, intending to take the sulphur-waters

at Leuk in Switzerland, which did me a great deal of good (against  
sore throat) last year.--

With kind regards also to Mrs Fabbri, in which Mrs  
Harjes and Mr. Winthrop join, I am

Yours sincerely,

Joh. H. Harjes.

Your letter of April 26th, I replied to May 10th.



Paris Exposition

29<sup>th</sup> June 81

Geo R. Prescott

As to Henry  
✓ 2 quadruplex

THE NORMANDY HOTEL

7, RUE DE L'ÉCHAUDÉ  
& 20, RUE SAINT-MARIE  
PARIS

Paris June 29. 1881.

Friend Edison.

Since writing you I have seen Dr. Herz again and he wished me to say to you that he thought the best way to exhibit the quadruplex would be to work it from the Exhibition Building to Bessières. He understands that Mr. Hamilton will come here in August or September and says he would like to have him put it up and superintend its operation and that he will pay him liberally for doing so. I think you had better see Dr. Green or Mr. Van Horn and ascertain if they are willing to allow Mr. Hamilton

to assist as requested by Dr. Herz. You will of course  
consult Mr. Hamilton also if there is no objection on  
the part of the Officers of the Company. Dr. Herz  
says he is the gaffer up of the Exhibition, and  
I judge from the appearance of matters here that  
his influence and position are very considerable.  
He desires to make a new Cabinet and will send  
the draft of one in a short time for your  
consideration. I leave for Germany tomorrow  
and shall be about two months returning to  
Paris the first of September. Dr. Herz addresses  
c/o 51 Rue Vivienne, where you had better write to

him; a communication with him  
through your Agent. I presume that  
Mr. Van Marn and Mr. Eckert will  
both be glad to aid Dr. Herz from  
what the Doctor tells me of his re-  
lations with them. I think it for  
your interest to be on favorable  
terms with the Doctor, and  
I believe he is able and disposed  
to be of service to you. I took  
occasion to express to him, and to  
the Count and Comtesse D'Anker,  
my appreciation of the magnitude  
and value of your inventions -  
particularly of the Incandescent &  
Electric Light - to which they  
all assented.

Yours truly  
Geo. B. Prescott

MINISTÈRE DES POSTES ET DES TÉLÉGRAPHES

EXPOSITION INTERNATIONALE D'ÉLECTRICITÉ

SOUS LE PATRONAGE DE L'ÉTAT

PARIS 1881

COMMISSARIAT GÉNÉRAL

Palais des Champs-Élysées  
ROUTE N° 19

Les bureaux sont ouverts tous  
les jours non fériés  
de 10 heures à 5 heures.

Paris, le 8 *juillet* 1881

*Monsieur,*

Les travaux de l'Exposition Internationale d'Électricité sont aujourd'hui très avancés. Les salles du 1<sup>er</sup> étage du palais de l'Industrie sont prêtes et les exposants sont à la veille de prendre possession de leurs emplacements respectifs dans chacune de ces salles.

En conséquence, j'ai l'honneur de vous inviter à faire poser, dans le plus bref délai, les appareils d'éclairage que vous avez acceptés de fournir et de faire fonctionner.

Agréez, Monsieur, l'assurance de mes sentiments les plus distingués.

*Le Commissaire Général*

*Monsieur Thomas  
A. Edison  
Menlo Park U.S.A.*

*G. Berger*

Paris July 5/81

Monsieur

The works of the International Electrical Exposition are today very advanced. The rooms of the 1<sup>st</sup> story of the Palais des Industries are ready and the Exhibitors are on the point of taking possession of the places allotted to them in each of the rooms.

Consequently, I have the honor to invite you with the least delay to place the lighting apparatus which you agreed to furnish and set in motion.

Accept the assurance of my most distinguished sentiments.

14 Rue Tilsitt

Paris, July 10.. 81

Dr J. N. Edison,

65. Fifth Avenue,

New York, U. S. A.

My dear Sir:

From our apartments I open a correspondence which I will endeavor to make as regular and circumstantial as possible. I will write every Sunday for purposes of weekly review, and, in order to make use of the Monday mail via Queenstown. If my letters are too long, recollect even a Charles Lamb could say on a similar occasion "he hadnt time to make them shorter".

Trifles. I arrived at Havre after a quick and unexpectedly pleasant passage. All packages were landed with me, but owing to the unexampled slowness with which the French custom house officers work, I could not arrange shipment of them by same train so I had them brought on by Leibel in the next freight train. They have arrived safely in the Palais de L'Industrie.

A fortunate accident occurred in landing. The barrel containing the lamps through gross carelessness of the boatman was allowed to fall from the gang plank mid way, and dropped six feet on the head which was staved in. I immediately examined the contents of the top layers and did not find a carbon broken! Mr. Cutting who was on the same steamer, was told of the circumstance a few minutes after it occurred, and was highly pleased at the result.

I had quite a number of conversations with Mr. C. during the voyage. He is a well trained lawyer, just in his views, and disposed to look on the equity side of all questions. For instance he seems to think indemnity should be paid the land owners who are injured by hydraulic mining operations. He thinks exceedingly well of Ore Hilling and will hold his stock.

I received a very polite telegram from Mr. Bailey as I landed, saying he would meet me at the depot in Paris, if I desired: a kindness of which I did not avail myself

as I could not send a reply on Sunday, however. I appreciate his kindness. He has been very attentive since my arrival in Paris doing every thing to facilitate me in settling into pleasant quarters &c. I have apartments in the house he is about to leave, (as he goes to Passy near the Bois de Boulogne in a few days), determining my suite is one I have engaged for Mr. Batchelor who will share expenses with me, as we will live together though in separate apartments as they communicate with each other very conveniently, the families taking their meals together. This arrangement as you see will save many inconveniences and loss of time.

I was promptly introduced to Berger and Bouquet both of whom I found very obliging and anxious to serve you. They enquired about the possibilities of your coming. I did not positively say you would, but lead them to believe you might be persuaded, later, to come over for a short time. I have also made friends with all the surrounding

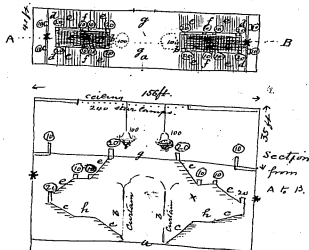
so that all business is much facilitated.

Space. I found that Mr. Bailey and Mr. Walker, Jr. had done everything that could be expected in the way of obtaining proper rooms for the exhibits, as there was much competition and the best places were taken by others; however, I have tried (as I always do), to turn disadvantages to advantages, and find that by being separated we can make some of the facts which we could not do were we able to place everything together. As accepted we are in three different spots. 1<sup>st</sup> We have the Grand Staircase; 2<sup>nd</sup> The two smaller rooms as indicated on the plan you have; and 3<sup>rd</sup> The space on ground floor for the boilers and the dynamo-machines; and perhaps the magnetic separator, as the latter is too heavy for the gallery weighing over 200 pounds to square meter. Through this may be arranged differently so as to allow of the weight being distributed by a platform, if Mr. Batchelor prefers.....

Now, the advantage to be gained by this dis-

tribution is, that it will be possible to make the illumination of the grand staircase a criterion of what can be done in the way of ~~decorative~~ illumination where it is desirable to use light for purposes of showing off decorations of interiors. As you know, whenever it is possible to use painting, the Benoch do so, and at this moment they are considering what method must be adopted for saving the beautiful pictures that adorn the walls and ceilings of the grand Opera house. I thought, therefore, to make the grand staircase not a show place for pretty effects, but simply a place of practical illumination on an immense scale. For instance, I entirely avoid any arrangement where the absence of a single light could be observed to mar any effect, as would be the case were lines or arches of light employed. To accomplish this I have determined to use two large chandeliers of 100 lights each, or one larger one of 200 lights, pendants,

from the ceiling which is 35 feet high.



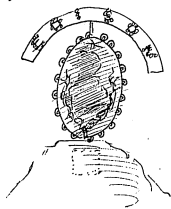
On each square foot on the landings I propose to put some magnificent bronze statue, any building groups of 10 or 20 lamps as indicated in sketch, thus (10), (20).

I will get some photographs of exterior and interior so that you can judge of the arrangement. If you recollect there is our magnificent archway as entry to the Palace. When you get inside of this there is a great hall which will be illuminated with just electric candles, 6 right left, & in front are 240 ways, the one in front, back, & the ground

floor exhibit space. The archway on right and left are of same size. I have stipulated to have these latter openings closed by heavy curtains to avoid disagreeable contrasts with our softer illumination. Now, I will not waste any force on the steps C, C, C, C, but will allow time for the eye to recover its tone in the muted light of the stair lamps the only thing that will meet the view as you pass the curtain is the letter E which I will have illuminated in lights either two whole lamps. This is a question which I thought of importance enough to consult over with Messrs. Bailey, Mackay, and Birger. You know that when ever the rulers of France have erected buildings they have left their monograms on all important points, Napoleons, etc. Napoleon the was first. Particularly careful with his various monograms N on the towers & N and H for the Louis Napoleon, Napoleon, and Nap. & Eugene periods. The E for Eugene is found on the Palace de l'Indus Fine in many places. Now, if there are Bonapartists on the Committee and Commissioners (which without doubt there



are) they will be pleased to have the letter E. call up reminiscences. If Republicans they will say "intellct over force: E. over N." And both parties will wonder until they reach the upper landing when their eyes will meet a revolving arrangement of this nature,



This is the medallion of the Photo Reliefs Co. crowning their small exhibit which will be used here for the above purpose. It was thought when I proposed writing your whole name in the space opposite the President room, in about 100 lamps, that it might not appear in good taste, so I dropped the idea; but with this arrangement above, there can be no question, even with the

most fastidious. Beyond see, the name Edison becomes the solution of the letter E. over the entrance.

The ceiling of the grand staircase is flat and lit through ground glass plates held in a pattern something like this:



At each intersection there is a rosette of a few inches diameter, in the center of which we can put a light which will be close to the glass and shining like a star giving a beautiful effect for over head lighting. All this ceiling will be covered on the roof with a dark cloth, which will prevent loss of light, reflecting all downward. This branch of the grand staircase illumination will take 240 lights, the chandeliers 200, the statues 200, the name, 60 total 700 for grand staircase.

Exhibits. The two rooms appropriated to us are smaller than those occupied by other important exhibitors, but we have the advantage of being the last and on the grand staircase the first. Now, all the walls of the Palais are covered with a deep crimson paper, which from our experience with the dark paper in May, Eaton's room, is very bad for light so much being absorbed, so I have obtained permission to use another kind, which of itself is something distinctive. In addition by the kindness of Berger I have taken into counsel the chief decorator of the Opera who has advised me this morning (they have no Sunday scruples here) to lay it off in panelled tints such as always best by gas light, these will be bordered by colored bands which will show the capacity of your light to show give true colors. At the same time I will try to obtain some fine painting to fill up

space on the grand stair case which is already decorated with about twenty pieces of Tapestry each the size of one of the sets of your private rooms. These are old, fine, and much faded but they will show by the very defect the value of your light which will allow even their colors to be determined.

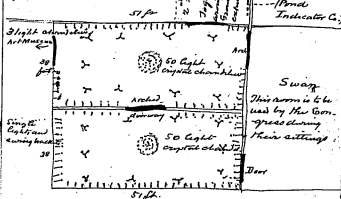
Boilers. I found the first half dozen courses of the boiler foundations laid, and still much exercised over the excessive slowness of French workmen. It is true they are very lazy and require much urging. He tells me I will not be able to fire up before the 25.<sup>th</sup> Dynamo foundations. These have been commenced and I have the men working on them to day. The bricks specified Little for the boilers are the common Paris brick, light, porous and easily broken; so I declined to accept them of the contractor and have made him substitute a Belgian brick which is even harder and heavier.

than our books. They will be laid in Portland cement and there will be no shake there if on the last day of the Exposition you were to run them up under 600 revolutions.

Cafe, Champs Elysees. Mr. Bailey seems disposed to light up this place of great rent 1000 feet from the building. If we are to calculate on 1000 lights for the day-nano which is a good limit to figure on, and divide up into 700 for grandstand case and 300 for the exhibits, we will not have any to spare unless at given times, as he proposes, we extinguish enough to carry out the lighting of the interiors at the Cafe'. I think it would be better to wait for the closing of the Exposition which will take place at 11 P.M. and then to throw all the light needed down the Champs Elysees to the Cafe'. I have obtained permission to run the engine after closing hours, so it will be possible to use as much light as we wish to.

If we light the Cafe' we will be practically demonstrating our system outside, where no engine is within sight and we will save time too, because after the Exposition everybody will break loose and want to utilize the material <sup>of the exhibits</sup> throughout the city. After 11 o'clock, (say 11 to 12) will be time enough to satisfy all the sight-seers at the Cafe or on the Champs Elysees; and the lamps could burn all this time during a year or more. We would have that much saved.

Exhibit illumination. The 300 lights in the Exhibit rooms I would distribute as follows:



This gives an overhead illumination of 160 lights and 140 around the walls of the two rooms.

On the Steamer I made the acquaintance of Mr. Schaus, the picture dealer of 230 West, who framed our bamboo exhibit-rooms. I have asked him to furnish us with pictures to adorn the walls and allow us to show additional effects. I expect him to grant the request (put to him in the light of a privilege). As a second card I am going to try to get more tapestry to put in Exhibit rooms, above the grand stand case, from other parties.

Installation & fittings. With Mr. Bailey I visited the largest house in gas fitting line here in order to make arrangements for chandeliers. He will give us every thing we want free of cost, if we pay transportation & for necessary alterations cheap enough, that. As a show to show how the winds blow, I mention that when another of the four five houses who work for the Gas Company (1 of which his room) undertook to do work for the Jacobsonhoff

Company, the 'imprudent ones' were ostracised - so this <sup>action to me</sup> shows the faith of the whole crowd in the Edison light.

I have seen Armengaud, and Ducloux. It is sufficient to say that in the case of both I came, I saw, and will conquer.

I have got Ducl. by means of the Photo. Revue Co. I asked in their representative for the privilege of exposing his best in relief at the Exposition, which he granted, with very much expressed satisfaction.

I will report conversation in next.

Armengaud gave me a reprint of a paper by him for you which I send with this. He talks electricity to me, and I talk systems and piracy to him. He wanted me to telegraph for the papers in all us etc. I asked both Puckas and Bailey, who went to London on telephone matters, to get what he could from Col. Couraud, if he had anything in that way. Please send the said papers as there is much mistrust here about the matter, and it would be well to show the decision has no bearing

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what ever on your patients.

I will write again by Wednesdays  
mail to finish up the papers I  
have neglected to collect in this letter.

I hope Rutah. is off on the 6 July steamer  
there is a fear here that he could not, because  
no confirmatory cables have been received.  
With regards to all the staff, I am

Farewell, yours,

Otto Hilgner

Dr Otto Hilgner

10 July 11  
Jasno Express

No 2

Paris

11 July 1887.

Dear Sir,

We have found it very necessary to take offices suitable for the reception of persons desiring to communicate in regard to the light & for the accommodation of the General persons having to do with your exhibit. We have therefore taken the office at No. 33 Avenue de l'Opera. The situation is one of the most suitable in Paris & the apartment contains 10 rooms, all looking on the Avenue or on the Rue Reine des Petits Champs, & is well adapted to all the present or future need of an office representing the light. On a corner looking on the Rue Reine des Petits Champs & the Avenue de l'Opera looking towards the Palais Royal we put your name on the Malouin, & on the front looking on the Avenue de l'Opera "Lumiere électrique Edison". We are furnishing it in an elegant & substantial manner & shall take possession on Wednesday the 13<sup>th</sup> instant. We have arranged for a decoration on the 14<sup>th</sup> July & if we receive good approbation we intend to show a few lights in the office on the 14<sup>th</sup> to perhaps 30 or 40 of the

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principal members of the Press, official personages  
scientific men; notably, Monsieur du Chancel whom  
Mr. Moser saw the other day with, as he will no  
doubt advise you, the most satisfactory result.  
The decoration is made at a cost of 3500 francs  
which we think well spent as it will give  
occasion to call attention to the opening of the  
Office. You shall get a good deal of the most  
valuable kind of advertising. - Between this &  
the 14<sup>th</sup> the principal newspaper offices will  
be seen & suitable mention made. - We shall  
have photographs taken of the Building with its  
decorations to send to you to add to your gallery  
of illustrations. - We have also taken the outside  
page of the cover of the official Catalogue of the  
Exposition for which we are to pay 1500 francs.  
In addition 4 pages in the text of the said  
Catalogue for a description of some of the  
inventions in your exhibit which are not well  
known to the public & for a concise statement  
of your position in the matter of electric light -  
the price of these inside pages is 720 francs  
each. - The Catalogue will naturally be a

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work of reference and in the hands of  
all persons interested in electricity we have  
thought this an useful investment. It has  
is preparing the maker for these facts - It was  
with reference to this that we called your asking  
the date of his coming as the catalogue  
was be closed on the 15 instant & there was  
no one in Europe capable of furnishing the  
necessary maker. In regard to the progress  
of wiring the Exposition building & the distribution  
of the light in the several spaces set apart  
for you Dr. Moses will give you full details -  
His arrival was very opportune we are now  
organising for Consecration work.

Yours truly  
P. K. S. & S. Bailey  
1887

T. A. Edison Esq.  
65 Fifth Avenue  
New York City  
State build



14, Rue de Valenciennes.  
Paris, July 12.. 87  
Dr J. A. Edison,  
65, Fifth Avenue } New York. U.S.A.

My dear Sir:

The following is abstract of  
Armstrong and Du Moncel conversations  
referred to in my last. — Mr. Bailey intro-  
duced me to Armstrong for the purpose  
of giving him an insight into your system,  
and also to remove certain prepossessions  
of mind by which it could easily be seen  
he was affected. I spent two or three  
hours with him profitably. We knew  
nothing whatever of the merits of the case,  
and appeared to be more ignorant of the  
subject than one would have supposed  
possible after the many conversations he  
must have had with Messrs. Bailey and  
Puckras. I enlightened him without in  
the slightest wounding his 'amour-propre'.  
He was delighted with the systematic appear-  
ance of all your electric light inventions,  
no doubt because his mind, freshly stupefied  
in telephonic affairs, was impressed with

the necessity for a thoroughness in all such extensive undertakings. With much self-satisfaction he mentioned that Bell lost his French patents through him; and he also said that Mr. Edison had taken precautions which saved him: to this fact I ascribe the apparent ease with which he accepted my statements about your extreme forbearance in patent affairs. He had elaborated a comparative table of the patents granted you and Alaxim, and he showed that 'over-claims' or rather a mixture of claims on different subjects, had caused the Government to demand a separation of the claims made by Alaxim. Before this was done, however, publications had taken place, and so the matter stood. Armingand said this might give rise to grave questions. I told him that he might rest assured his estimate of your caution was correct; and I cited the case of your not allowing two copper plates cartoons to go into Italian hands while any doubt existed about your patent, being protected

there; also your getting terrible to cable to Europe to Ruess if the disc dynamo had been protected, before allowing me to describe it.

I am to meet Armingand at intervals in order to compare the English and French patents, and to put him on any points upon which he may want general information. He is very busy, has a half dozen clerks, and affords the hurried air of a man with business too large for his clerical force.

He listens attentively, and at the same time gives orders about business, business around, telephones his clients, and makes memoranda. He is Attorney for several electric light companies, and you Ruess his official connection with the telephone. Altogether he is agreeable, polite, and he makes an honorable impression; still Mr. Bailey speaks of employing counsel with him.

Du Moncel. When I arrived I presented the letter I showed you, to M. Herz who seems to have a preponderating influence with the "Lumiere Electricque." He has

really been of service to me. He sent me  
"La Lumière Electrique" from the Beginning,  
introduced me to everyone of the writers, on  
that paper, and finally took me up  
to Dr. Moncel's house to introduce me.  
He left me alone immediately with that  
Gentleman, and I talked Edison fast to  
him for two hours. I will not of  
course tell you what I said it would  
simply be disgusting to you. One fact  
I mentioned however, which I must tell.  
He was showing me a coil of several  
hundred feet of copper wire closely wound  
on a bobbin without insulation, with  
compressor plates at the ends used by some  
for purposes of demonstration that Pressure  
longitudinally increased conductivity, when  
I said "Permet me, Monsieur le Comte,  
(he is a count, you know) to mention  
a little incident. I was one day talking  
to Mr. Edison about the wonderful pro-  
-perties of his carbon button, when he said  
to me he had just been told of your having  
also spoken in your great work, of the  
carbon

Paper's Experiments  
on the <sup>conductivity</sup> of <sup>carbon</sup> <sup>rods</sup>  
varying conductivity of carbon. He (you) then  
expressed most naively his inability to  
verify the statement of his informant as  
he could neither speak nor read French,  
and asked me to translate passages from  
your work. "This seemed to touch  
the man; for he thawed immediately and  
before I left asked the privilege of describing  
your lamp and offered to carry on the  
experimental verifications in the lab-  
oratory of the Institute. He can be  
easily had to read a paper on the  
subject before the Institute which would  
be subject to revision and correction;  
however I do not think there is any  
more sting in him <sup>after</sup> what I said  
during a very long visit. He said  
he would call on me soon.  
By the by, I never got the letters of intro-  
duction I was to have brought. In France,  
you know it is necessary to be identified  
and endorsed. Even Mr. Baileys who is  
well known here, takes with him your

6.

the  
letter authorizing him to act for you at the  
Exposition, whenever he wishes to transact  
business for your account. By the way I  
am received however, on the mention of my  
business I am always sure of a cordial  
rearing.

I am just in receipt of Mr. Eaton's  
letter informing me of the unavoidable  
delay in shipping the great dynamo.

I will reply to him on the subject and  
to do so must also in order to mail by  
today's steamer via Rumboldt.

Faithfully yours,  
Otto Lillicrup

103/  
Paris; 14 July 1881

Dear Sir,

The decorations of the office on the Avenue de l'Opéra of which we advised you in our letter of the 11th were placed yesterday and are the nearest of anything that is to be seen in Paris in connection with the fete - We arranged with Mr. Leley of the 'Agence Havas' yesterday to pass an extended notice of the Edison Electric Light and of the decorations to the Provincial and Foreign Journals, several hundreds in number, in honor of the National fete, and without any expense - This will recall to your mind the advantages that Mr. Bailey represented to you would grow out of the relations secured by the Syndicate - In Paris we have made arrangements for securing notices of the Light and also in connection with the decorations. Indeed you will find an article from the 'Figaro' (cost 500 francs) - We shall have a page in the 'Monde Illustré' at a cost of 2,000 francs on Sunday next giving one half of the page occupied by a design showing the decorations Avenue de l'Opéra and the other half with matter which Doctor Moses will prepare and dispatches for the Herald and the Chicago Times - We also arranged yesterday and articles prepared by Dr. Moses were sent by Mail - We have also secured that Doctor Moses shall prepare the general article on the application of electricity, which will follow the List of exhibitions in the official catalogue and this we hope will give an opportunity for a proper statement of

T.

your position in the matter of the Light - We beg to urge on you in this connection the desirability of a visit to Europe during the month of September even if your actual stay should only be for a week of the time during which the Congress will be in session. Everybody is asking whether you will not come and expressing a hope that you may - Monsieur Berger and all the persons officially connected with the Exposition are most cordial and pressing in the expression of this desire - This mention is merely made to place the matter before you and further considerations in its support will be presented hereafter.

The Syndicate has increased the amount disposable for the purposes of the Exposition to 200,000 and is about appointing a Committee of which we shall be Members to look after all matters connected with the press and the general success of your exhibit - An assessment has been made by the American Commission of the Exposition of 2,500 francs on your Exhibit for the general expenses of Washington, cleaning &c and we have drawn on Mr. Leon for this amount - In regard to the delay on the part of Leon in calling you the amount of 11,000 dollars as you requested it grew out of the difference between Leon and us in regard to the terms of the Guarantee which we have given for the advance of 150,000 francs - At the contract stood the 1000 Shares put up by us might have been held not only as a guarantee for the 150,000 francs, but also for any excess of this sum, should any advance in excess be made - Also it

might be held for the purpose of bringing a pressure to bear in regard to any points of difference that might arise between the Company and the Syndicate, whether the questions should be raised by the Syndicate or by the Company, our position being one in which we might suffer from one side or the other. We required a rectification of this situation, which after several days delay was agreed to by Leon who thereupon cabled you the amount required.

Very respectfully and truly,

Ruska & Bailey

Thomas A. Edison by  
65 Fifth Avenue  
New York City

MEMORANDUM.

From

THE ELECTRICIAN,  
996, STRAND,  
W.C.

London, 16<sup>th</sup> July 1887

To

L. A. Edison Esq.

Dear Sir,

As I wish to render my report of  
the Paris Exhibition as complete as possible,  
I am greatly obliged by a list of your  
exhibits with description & drawings of  
same to aid me, if it is not troubling  
you too much.

Believe me, yours very faithfully,

Chas. Weiss per M.M.P.



# EDISON MACHINE WORKS,

104 Goerck Street,

## ORDER FOR WORK.

The following work is to be done for the Edison Machine Works, according to instructions and conditions as to price, quality and time of delivery as herein stated. The undersigned accepts the order subject to all the conditions recited.

[LIST BY CHARLES BATCHELOR]

New York,

188

What I still want July 18<sup>th</sup> 1881

- 1 Steam Dynamo with all appliances
- 1 5 H. P. Motor and countershaft
- 1 Sewing machine motor
- 1 Bag pure white sand
- 1 Box pure black magnetic sand
- 1 New Erie dynamo
- 1 Pump motor and pump.
- 1 Fan motor and fan
- 150 2 light Chandeliers
- Some 2 light Chandeliers
- Some 1 light Chandeliers.
- A few Chandeliers with drop lights
- Switches
- Lead wire
- 1 Dynamometer.
- 1 Double point switch
- 1 50.000 Per Sil Spool.
- 1 1000 " " "
- 1 5 Ohm " " "
- 1 Beam meter
- 12 Regular meters
- 1 Domestic recorder table
- 1 Full set Automatic Morse
- 1 " " " Roman letter
- 2 Perforators
- 1 Paper written
- Paper for both
- 4 Batteries boxes for telephones

Edison  
Machine  
Works.

Edison Machine  
Works.

Payman

[LIST BY CHARLES BATCHELOR]

- 1 Blake transmitter
- 1 Phonograph telephone outfit complete
- a small quantity of silver foil
- a never ending clockwork
- 1 Kerosene lamp with Electric Mower
- a cigar lighter

Bergman

- 50 Brushes for 110 Volt machine
- 1 Microscope
- 1 Th. and Galvanometer with mirror
- 1 Set Leyden jars in case.
- 1 Pair Embossing Lusti
- 1 Telephone repeater
- 1 Quetta telephone
- 1 4 Diaphragm telephone
- 1 5 Carbon transmitter
- 1 ~~Two~~ ~~tubes~~ two disc transmitter

Logan

Shaw

Logan  
Logan

- 1 Mica condenser in vacuo
- 1 Magnetic Micrograph
- 12 High vacuum tubes

Lamp factory

Paris Exposition

July 1881

Monte

104  
Paris  
22 July 1887.

Dear Sir,

Enclosed herewith you will find a proof of the Article sent out to the Journals in the Provinces on the occasion of the National Fete, also the notices from the Figaro. Copies of Photographs of the Building in which the office are situated are also sent to-day by express. Our decorations & illuminations were the greatest attraction of the quarter. In the evening the Avenue was blacked by the crowd which was formed in front.

The matter that has most occupied attention during the last days is the official Catalogue of the Exposition. In addition to the reasons given in previous letters for going into the Catalogue is the fact that it will serve as a handbook for Government visitors to the Exposition - As few of them will know anything of the matters they write about they will naturally make up their reports & draw their conclusions largely from this convenient source. In anticipation of this <sup>general</sup> <sup>relating to the whole Exposition</sup> articles are being prepared by M<sup>r</sup>. Tisserandier & M<sup>r</sup>. Hoopitallier - I recd on the

Lahore the Printer who has the getting up of  
the catalogue & make arrangements with him by  
which Dr. Moss is, to furnish material  
descriptive of your exhibit amounting perhaps  
to 8 or 10 pages - We have also engaged the two  
first pages, following the general Catalogue &  
preceding the 2 Articles here referred to for a  
special article on your exhibit, the whole of which  
will probably make an expenditure of about  
8000 francs on the Catalogue - Mr. Lahore has  
promised to Bailey to show him the material  
relating to the Maxim Light & not to allow  
anything to go in to the Catalogue that he  
objects to, without giving reasons to the Maxim  
people - We have also agreed with Mr. Hospitale  
to write articles for us & to make translations &  
fix up any matter for publication and are  
treating with a prominent Member of the  
Press to work with us in the Journal of  
Paris as soon as the Exposition Campaign  
opens - It has also been agreed with, Mr

to remake the prefatory article, in which only a slight mention is made of your labors, & to give it of proper prominence - For all the considerations and reasons given we think it well to make the expenditure on the official catalogue above spoken of.

In regard to the matter of the employment of counsel & proceedings against Maxim Kuran.

Soon after the return of Bailey from the States, this matter was discussed with Armand. He had been much impressed by the Maxim people who had also consulted him with regard to their Patents. It seemed best to leave the matter until the arrival of Dr. Moes in order that your Patents might be considered more intelligibly - Two days ago Mr. Armand said that your Patents antedated by nearly a year the Maxim Patents which had not been taken in compliance with the laws, & that all there was in them of any value was covered by yours. Your first Patents in France bear date the 26 Nov. 1879 & 13 April 1880 - Those of Maxim bear date 9 October 1880 & 15 December 1880, but the Maxim Patents were delivered in the States on the 20 July 1880 & the 22 March 1880

thus invalidating them under French Law  
respectively. Melham retained as Counsel Mr. Talatoff  
whose position at the Paris Bar may be judged by  
the fact that 2 days ago he was elected to the  
Council of the Bar to succeed Mr. Dufray just  
deceased. In the early part of next week Mr.  
Ameyand will have completed his Brief of the  
Case to put in the hands of Mr. Talatoff & you  
will be advised of the course he recommends.

Matters in regard to the jury of the Coupures  
have not yet taken shape sufficiently to make it  
worth while to write about them, as all that  
passes now is merely gossip. It may be well to  
mention however that probably one half of the  
jury will be named by the habitators & one half  
by the Government contrary to the first idea of  
the persons officially connected with the reposition.  
A few days hence these matters will have an  
interest.

From the mention made in the Journals of the  
depositions at 33 Avenue de l'Opera on the 17th  
many letters of Enquiry regarding the light and  
propositions for business in one way or another  
begin to come in - Yesterday the business of

The Ville de Blanc came here & offered to lease a concession at once for the lighting of that town. It is a place of about 8000 inhabitants & they are just debating whether to put in the light or gas - He said the only condition of the concession would be that the light should be furnished as cheap as gas - He told him that on Sat. Bachelors arrived he would go out on a Sunday & see the place & that thereupon probably some arrangement could be made for accepting the concession -

We have just closed arrangements with the famous Baccarat boys for the loan by them of all Chaudhiers & Brackets that we may desire for the Exposition & D. Moses is now making the selection of such as he finds suitable. A similar arrangement is under consideration by Barbadienne which with the tapestries & pictures of which D. Moses has written you, will make your show as interesting from an artistic point of view as it is in other respects. —

Yours very truly,  
Young  
5<sup>th</sup> Park St & Bailey

J. A. Benson Esq

Paris 26 July '87  
My dear Juddell,

Have had no time to write.  
Until lately have been coming  
& going between this & London, and  
sitting about town all the time.  
There is a great deal of detail  
about the opposition matters and  
since Dr. Moore's arrival have  
been quite constantly on the tramp.  
We are working pleasantly with  
him and when "Patch" gets here  
hope to make things hum.

Pickens will leave for States  
next week, and arrangements will be  
made so that you receive monthly the  
compensation agreed. Your letters  
are interesting and useful. Make  
them fuller and cover all current  
matters. We can't ask you questions  
very much, because we don't know  
what is going on. Just the matter



that make your daily life and  
that you make no account of are the  
things that are of interest and use here.  
We were in a little of a "funk" Saturday  
even cable saying "big dynamite" would  
be sent first half of August, you would  
do well to write us first what is going on  
in such a matter as that, and then to  
our direction to not make improper  
use of it. Then we should know how  
to take outside reports that always  
get out (as in this case) and which are  
always worse than the facts. - Write  
about progress of electric lighting in  
States, whether you own or that of hotel,  
your extracts from journals, and your  
explanations of them (in many's affairs)  
were very useful. Keep us fully posted,  
that's the whole story, and the things  
you make no account of are just  
what we want, Yours ever,

J. H. Bailey

Blank No. 1.

## THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS AND DELIVERS MESSAGES only on condition, limitation or reserve, which have been imposed in by the sender of the following message.

Errors can be corrected immediately by repeating a message back to the sending station for correction, and the Company will not be held liable for errors or omissions in transmission or delivery of messages.

This message is an UNREPEATED MESSAGE and is delivered by request of the sender under the conditions stated above.

A. B. BREVET, Sec'y.

13 MORVIN GREEN, President.

Dated *Merle Park, N.Y. April 26*

Received at **791 BROADWAY,**

To *Mr. Samuel Smully*

*65 Fifth Ave*

READ THE NOTICE AT THE TOP.

*Edison ny how many feet  
Conductor tubes have been sent  
Puck*

*No Sig*

*11 p.m.*

*A*

THIS TELEGRAM HAS JUST BEEN RECEIVED AT THE OFFICE IN

**791 BROADWAY, near Tenth Street,**

WHERE ANY REPLY SHOULD BE SENT.

Direct Wires.

Paris Exposition

26<sup>th</sup> July 81

Puskas

As to Conductors

Cryptanal  
Dear Sir;

Paris <sup>5</sup> July '91.

Had long conversation  
with de Moncel yesterday  
morning in which he explained  
fully his connection with  
Lumière Electrique, and  
agreed on certain conditions  
that Puskas will explain  
on arrival to sever his con-  
=nection with L. E., and go  
with us. We are now  
treating actively for  
establishment of <sup>a</sup> journal,  
and for person to work  
with us on press during  
absence. It is possible  
we may close with Flammarion.

<sup>2</sup>  
of Observatory to go in  
with us, — are also  
looking up subject of lamp  
factory and manufacture  
generally and on Batchelor's  
arrival will get some  
=thing in shape for  
Puskas to take over to  
you. —

yesterday we had  
interview with some ten  
of the persons in our  
syndicate, among whom  
Leon Porges & May, at which

Dr. Moses was present and explained in detail your system of E.L. They seemed much satisfied.

The use of the tapestries and pictures has obliged the covering floors of two salons at exposition with

Linoleum at expense of about \$500. — <sup>the remnants of 1890,</sup> The chimney costs \$350, and the supports <sup>cannot get going out of putting up of 1890,</sup> \$150. — We were obliged to provide for lighting the grand staircase in interval between opening of exposition

<sup>4</sup> and mounting of big dynamos. at first we proposed putting in Jablonsky, but on further consideration it has been decided to put in the Pilzen, <sup>if they accept our proposition,</sup> in part not to give the people advantage of such an adv. in part because the Jab. costs from four to five thousand francs, while the Pilzen costs nothing.

Have just found that the Herald cut out the name of Edison in cable sent the 14<sup>th</sup> July to New York. The cable as published reads "a remarkable display is made by an agency." Can you without trouble find out whether your name was cut out here or in New York. Here they assure us it was done in N.Y.

5

We shall endeavor to have  
closure made of Maxims  
affair in opposition on day of  
opening. It will not be done  
except on clear opinion  
of counsel, sustaining such  
course. If the opinion of  
counsel shall be unequiv-  
-cal we understand your wish  
to be in the direction of such  
action. Yours, very truly

Dundas & Bailey  
Thos. A. Edison Esq.

Enclosed please find proof  
of first and last pages of the  
Opposition Catalogue, i.e., the  
outside cover

MINISTÈRE DES POSTES ET DES TÉLÉGRAPHES

EXPOSITION INTERNATIONALE D'ÉLECTRICITÉ

# L'ÉLECTRICITÉ

ET

## SES APPLICATIONS

EXPOSÉ SOMMAIRE ET NOTICES  
SUR LES DIFFÉRENTES CLASSES DE L'EXPOSITION

révisé par

MM. AMENGAUD, E., BECQUEREL, H., BECQUEREL  
PARIS. DENT, CLAYTON, AVE. DRÉGOET,  
CLÉRAC, M. DEPOREZ, HEN. FONTAINE, MASCART, RAYBAUD, SERRET

PARIS

A. LAHURE, IMPRIMEUR-ÉDITEUR

9, RUE DE FLEURUS, 9

1881

Ces Notices sont destinées à rappeler aux visiteurs de l'Exposition les principales notices sur la science électrique et ses applications. Les auteurs de chacune d'elles ont renvoyé autant que possible aux parties correspondantes du Catalogue. La lecture de ce document fournira donc à ces Notices un complément à peu près indispensable.



EXPOSITION INTERNATIONALE D'ÉLECTRICITÉ

# LUMIÈRE ÉLECTRIQUE EDISON

SALLES 23 ET 24 PALAIS DE L'INDUSTRIE

BUREAUX, 33, AVENUE DE L'OPÉRA

Collaborateurs de M. Edison

AU PALAIS DE L'INDUSTRIE

MM. Charles BATCHELOR, OTTO A. MOSES

Pour renseignements

S'ADRESSER AUX REPRÉSENTANTS DE M. EDISON

MM. PUSKAS et BAILEY

33, Avenue de l'Opéra, 33

*Paris Exp.*

*July 29-31*

*Puskas & Bailey*

*Caractéristiques  
général*

*ck*

*Charles  
Puskas*

S. J. Amerique — La Grande Havre tomorrow  
Saturday July 30 1871

My dear Edison:

One Milling Machine:- Just before I came away Beaumont's partner called at Bergman's to get the drawings to make another small one milling machines like the one I have — I met him there and directed him where to get them. I also told him that I had made a few alterations on the machine and what they were but for fear he did not understand I will give them here:- I raised the magnet 1<sup>st</sup> by putting a piece of hard wood 1<sup>st</sup> thick under the track that the magnet moves on — I also raised the trough 1<sup>st</sup> by putting a piece of hard wood at X —



I also closed in three sides of the machine so that the wind could have no effect on the ~~water~~ stream — I also closed up 1<sup>st</sup> on each side of the slot; in the new one the slot that the card runs through ought to be made just 2 inches narrower so that it does not need closing up.

Catalog  
Order

I have during the voyage fixed up the codes for our use and I mail you two and keep one for myself — You will find them indexed at the end for what I have put in — There are many pages to spare — I have left (all through) words which you can use to add any thing you may want to put in, but always take care to mail me the addition, which I can add to my book.

In Catalog I shall use the word "Edison's New York" and I shall register myself at Paris as "Batchem Paris" as soon as I arrive, so unless you have made any other arrangements address me so —

11  
-  
not  
Dynamite. I am exceedingly anxious to know how you have  
got rid of the "big" or whether you have succeeded in getting  
rid of it at all - If you have not shipped it by this time;  
I hope you have shipped one the South American 1/2 light  
machine and do not forget to send me a countershaft  
and pulleys for it, the exact counterpart of the two  
countershafts that Logan made for me also a  
few extra brushes.

We have Rev. P. Morton on board, he goes out to France  
as U. S. Minister and I have made a friend of him;  
have had a number of conversations with him on  
which he often referred to the light - He has not seen  
our exhibit at 65 but thought your light was similar  
to the ones he had seen in the streets of New York, he  
was quite interested when I explained it to him.

He of course is our Commissioner General at the Exposition  
Walker being the Executive Commissioner - Here are  
I believe seven others of which Freeman of the Patent  
Office is one and on board with us

My policy here will be to make a friend of everybody

Yours "Patch"

None of us sick

Pain Exposition

July 30. 51

"Patch"

[THIS LETTER WAS DATED JULY 2, 1881 BY ITS AUTHOR, OTTO A. MOSES. THE DATE WAS SUBSEQUENTLY ALTERED BY AN ARCHIVIST TO READ "JULY 25-29 OR AUGUST 2." THE LETTER PROBABLY WAS MISDATED BY MOSES. IT SEEMS TO HAVE BEEN WRITTEN AFTER HIS JULY 10 LETTER TO EDISON AND BEFORE HIS AUGUST 2 LETTER.]

Mr. J. N. Edison

Mr. Ruess, Detroit, Mich.  
Paris, July 25th 1881.  
(August 2)

65. Fifth Avenue ... New York. U.S.A.

My dear Sir:

Last Sunday, which should have been devoted to correspondence, was spent on the road to Cherbourg. Your cable asking me to go there for Mart. Force, was handed me by Mr. P. Ras.

At the same time I acted on the statements of Mr. Eaton, in his letter of 25 ult., that the bulk of the exhibits and everybody except Mr. Batoulor would leave on the 6<sup>th</sup> inst. in the Labrador. I went first to Harro and reached there as the vessel was moved to the wharf; but to my surprise no one was aboard of our force, not even Mr. Mackenzie, who was expected particularly by the representative of the Pond and Co people.

There was stuff for me aboard, so learning particular instructions for its forwarding with our agent, I left for Cherbourg, where I arrived three hours before the steamer came in. Met Long, Villard & J. on the Lookout

In this way I lost three days (and nights), so I did not have time to write you during the week.

Salons. Arrangements have been concluded with the 'Teintures Artistiques' Company, by which they are to furnish one of the salons with their magnificent productions. I saw their process, which is simple enough, but costly and difficult to obtain in perfection on account of the steel required in working it. It consists in painting on tapestry, or silk with about a dozen colors, which by a secret process, they can fix in the body of the fabric. Only one picture can be made at a time, and it must be done by the hand of an artist. In this way they are reproducing all the wonderful Gobelins which belong to the State. I saw one immense copy they were making of one of the finest tapestries belonging to the Government: we will have it on our walls, as also about twenty more.

The second salon will contain 300,000 francs worth of modern paintings by the best living artists - to the number of twenty five or thirty. The walls of the salon will be covered with a maroon colored stuff with two rows of velvet a yard wide, at top and bottom. This will furnish a grand background for the tapestries and pictures. The five doors will be draped with heavy damask curtains, and the principal entrance will be decorated with all the flags you see in the photographs of 33 Avenue de l'Opera. The floors will be covered with a kind of cocoa matting (cloth) of uniform tint. The center of each room will be lit by a chandelier containing 75 half lamps. I have selected  $\frac{1}{2}$  lamps for this purpose. I will, directly, state why. All around the room, at distances of about 1 yard, are to be placed whole lamps. At the same time from the ceiling may depend (lamps are wired for them)

below three light chandeliers - but their light may be trying to the eyes of Parisians who are accustomed to candles and inferior gas. Now, for this reason, and for several

essential ones, I am going to use  $\frac{1}{2}$  light in the salon chandeliers. We will have two dynamos, one of 110 volts and the other of 55. The first I expect to furnish

80 @ 90 lights and the second 150 half lights. I have wired in such a way

as to allow the central chandeliers to be independent of the other systems, because

1<sup>st</sup> the 150 half lamps will light the two salons pleasantly and completely.

2<sup>nd</sup> because if anything should happen to the big dynamo we could still light the salons, brilliantly and show the working apparatus in the rooms.

3<sup>rd</sup> If the 40 lamp machine should give out too we still would have a complete illumination for the Exhibit.

Again, you must recollect that the glare of a fine 16 candle light to eyes

that have been accustomed to Cro-Magnon candles, will be much criticized; further, chandeliers are already placed in Paris and are adapted to lighting with candles. If they light sufficiently (and Parisian salons are generally well lighted), we could not give them 16 times as much light as they have been using and you could not cut of the chandeliers to suit, so I think the half light scheme will work.

25 will be different on the grand staircase where the illumination will be on an immense scale, and 16 candle light will not be criticized. By the way, they will be put in a magnificent cut-glass chandeliers <sup>existing specimens</sup> the largest in Paris, and intended for 180 candles. What an effect that will produce with 16 x 150 = 2400 candle light! At the same time we will have 600 more lights grouped in bronze figures, and standing the ceiling.

Boilers... They are finished, with exception of surrounding wall, and water will be let into them in a couple of days.

Little has been very careful in putting them up, as any breakage would have to be followed by the delay of ordering from New York. I feel much relieved now that they are created.

Foundation for dynamo is also completed.

This is made on a rubble layer on foot blocks. The blocks of which it is built are very hard and they have been laid in portland cement. I had this done because there did not seem to be too much strength in the brick & wharf wall on the outside of the hollow space left. These can, however, always be filled in with cement, if necessary.

No arrangements had been made by the Commission to run shafting in the Roussin section; so Dr Barker is going to try and have a 40 horse portable engine put up back of our dynamo and shafting to this we will attach the small dynamos. I enclose a plan of the American section which I asked of Walker.

I send by this mail a copy of the Revue des deux Mondes, for 1878, in which is an article by Goussier Bréguet which he dedicated to you. He wants your

photographs with autographs.

I have written the articles in the official catalogues descriptive of your exhibit and have, so redistributed the matter giving titles of inventions, so as to put you in every group of subjects.

You have received a description of the office in 23 Avenue de l'Opéra. It is very comfortable and quite extensive, and is in the best situation in Paris.

The 'Electricien' is only a few doors off. I called to see Gaston Tessandier about the articles in the catalogue as he is employed by Lalure the publisher to prepare the 'Promenade' as it is called, that is a walk through the Palais. Tessandier prepares the scientific articles for which I have given the material describing us.

Tessandier is a very nice, dignified and polite man. He lives 19 Avenue de l'Opéra in a flat that costs over \$2000 per annum. He is, of course, on the other side through his connection with 'l'Electricien'. But I have relieved him of the trouble of

describing your exhibit, and have tried to make a friend of him. He is engaged in balloon experiments and proposes to use Plante's batteries for storing the force to drive them. He showed me his apparatus and drove it for ten minutes with a little Plante secondary weighing 400 grammes with astonishing rapidity.

He had 4 of these secondary cups and said he would ask Plante who is a friend of his, to allow him to store one and give it to me to send across the Atlantic to you. He is full of the subject.

I think it would be wise to have your different inventions, about which there will be most interest expressed and most debated, described by the most prominent electricians here. As I mentioned to Desaudun, it would be possible for him to select what he prefers to describe for publication, and <sup>at a moment</sup> destined to be distributed. He said he would be glad to write about the motor, rope

8  
which was the only telephons through which he could hear - as he is deaf. He said they were not to be got here and he would like to have one. Can you send him one - it would do good as he would be reminded of you everytime he spoke in it.

9  
Desaudun told me when I enquired for Hoepelaker (to give him copy, he was at the office of L'Electricien. "You know, I suppose", he said "that we are owned by those who oppose you; as when you go to the office, you will find yourself so to say in the camp of an enemy, but be assured that though we are employed by them you will find Hoepelaker an independent fellow and I am also the editor of 'Nouvelles Nature'". I added, "And I hope that what ever the relations of our principals it will not interrupt what promises to be the beginning of most friendly acquaintances." So this he replied warmly and I think he's all right. Berge wanted me to cable when the great dynamo would be here, so that



he might arrange to delay the opening  
in order ~~that~~ you could carry out all  
the programme. He is exceedingly ho-  
-ble and willing to do anything he can  
to facilitate us. As Mr Bailey had al-  
ready telegraphed you, I waited for your  
reply which I have heard to day from  
Mr. Bailey; so tomorrow I will tell  
Mr. Berger that Mr. Batsheler who  
was to have brought the dynamo with  
him, thought it best to allow it to  
run for a couple of weeks at the  
works so as to test all the parts. That  
this was suggested by a disarrange-  
ment of some small parts of the  
machine, but which, it be rectified,  
required its being dismounted. This is  
better than running the risk of being  
compelled here to do so, where we have no  
facilities for handling it in the Palace.  
That it would have in the best blower  
that could carry it, which would be

in August, say, about the middle of  
the month. If the grand occasion  
must be lighted I would have it done  
by Job-lockhoff candles, which are in  
local use, answer tolerably, and are as  
novelty to Persians. They would no doubt  
do it for the time we are delayed. I  
will, however, see what Berger suggests  
before speaking. He may be induced  
to leave it until which may be the  
better plan; but I prefer the first.  
I think too (the progress of the Expo-  
-sition is so slow) there would be a real  
good attendance until far in August.  
It will be undoubtedly, opened <sup>officially</sup> on the 1<sup>st</sup>  
to be reopened on the 10<sup>th</sup> to the public.  
-  
Muehlenz has just put in an ap-  
-plications, so, I will close until I  
have pumped him dry.

With kindest regards to everybody,  
I am  
Faithfully yours,  
Otto Liljenes

14 Rue de Valenciennes

Paris Aug. 2. 87

Mr J. N. Edison,  
65, 5th Ave. New York. U.S.A.

My dear Sir,

Saturday, Mr. Bachevalier arrived with his family and the rest of the staff. I had an agent to meet him and take charge of the shipments; as he came right on reaching here that night.

I am glad to say he found us further advanced in our preparations than any other exhibition in the Palais.

Yesterday while breakfasting with Mr. Herz and Mr. Depretz. I was introduced to Mr. Ponce, Mr. Hughes, and Mr. Charles Bright. A more favorable opportunity than that over the breakfast table could not have happened; and before it was over the two first gentlemen expressed themselves anxious to have all the previous unpleasantness absolutely forgotten. I made an appointment to introduce Hughes to Bachevalier and to have Ponce present. I took

occasion to tell Batchelor of it in my short. I am delighted to hear of the success  
while after Prof. Barker was talking to of the dynamo. Reger desires something  
him and said Price had gone for him done by <sup>to</sup> illuminate the ground vacated,  
on a certain occasion. I suggested that so we had to decide on using some form  
should join us in a visit. He went, of arc lamps. The proposed Jablochkoff  
and a happy reunion was effected. but after deliberation I thought that would  
be advertising him at our expense; par-  
ticularly, as the Jablo. people asked 4000 francs  
for a month's illumination with 16 of  
their candles, and a proviso that if we  
did not come to town by <sup>they would say in prospect</sup> 1<sup>st</sup> Sept, as I  
took an arc lamp belonging to a friend  
of Puellas (Pleiss patent) which we  
got for nothing during the time we  
use it, and can take out when we are  
ready. This lamp is said to be pretty good,  
but we will only take enough of them to  
light the stair case, not to illuminate  
it or anything like the scale we are  
going to smelting.

like yours with one lamp over it. The Exposition is beginning to take shape.

but there will not be anything like a full opening. There is so much cutting of concrete soil going on in the Palace that a cloud of dust is always filling the atmosphere. I did not pretend to open the fine instruments while this lasted so fixed everything else first... There was nothing hurt in all our shipments to date but two lamps in the carbon sheet; two lamps in the barrel that fell from the young plants and a bent axle in a truck printer.

De Moncel and his wife called to day at our rooms and examined all that was sent. She is a blue stocking and got very interesting. took interest in everything and said she would call every day..

Henry requested politely to the request to have the Sadioupin instruments, provided Dr. Brew suggested him to do so. He does everything he can to facilitate my personal communication with scientific people here. He proposes to help me all he can in the summer. *Electricity* *Physics* *Chemistry* *etc.*



Committee when the make up of case is ready, and your consent will be asked by cable. In case you should see fit to decline our brief request, we hope you will reconsider and cable consent on reading this.

(1) We shall not propose this action except on the clearly expressed opinion of able counsel that the step is fully justifiable legally, and that it does not expose the company nor us to pursuit for damages.

(2) If we have a clear opinion in favor of this action it is in every way desirable. The Maxian people are stirring wind for capitalists and are making great publicity. The seizure of their exhibits will deter capitalists from taking them up. — In the Electrician

The Maxian people have a strong organ, and by that and other means they are being put forward to seriously dispute, under what you own and other experts declare to be false pretences, possession of the field with you. They should not be allowed to get possession of public opinion, and to confuse it with the idea of an even and legitimate rivalry.

To Aug. we have undergone with Mr. <sup>Lawrence</sup> Dalston, then at five o'clock. All hands were present. Bachelor thinks with us that it is better to go for Maxian well at this time, so as to put the force of the blow on him.

(3)  
His ~~name~~ Mr. Bateelor went  
with us to Hamorail, and his state-  
ments and ~~explanations~~ <sup>explanations</sup> had much  
effect on him, and he comes to the  
Palace on Wednesday next to take charge  
of the Small Dynamo. — We have  
mentioned that arrangements have been  
made that shall secure us the Regatta.

This afternoon we hope to close an  
arrangement with Mr. Hebrard, Agent,  
and Director of the Le Pape, we have  
the debate with us. I think of these  
arrangements involving consid-  
erable sums of money will be  
given next week.

Reef & Tug  
The Edison Co., Pushover & Sail;

14. Rue de Tilsitt  
Paris, Aug. 5. 1881

Dr J. D. Edison

65. Fifth Avenue  
New York

My dear Sir:

Already it would seem  
that the honor you did me, in putting  
me in charge here before Mr. Batchelor's  
arrival, has borne fruit. Messrs.  
Puekas and Bailey are desirous that  
Mr. Batchelor and I should join them  
on equal terms in developing your  
electric light in Europe.

I will say (as I have said to them) to  
you and all interested, that if you  
decide I can be of service to you in that  
way, I will be happy to enter into the  
arrangement.

Hoping to hear soon from you on  
the subject, I am

Faithfully yours  
Otto To Mooses



Aug 6<sup>th</sup> 1881

My dear Susan

I send you a  
check of ~~Susans~~ Acheson's  
which please pass through  
your bank and when you  
have anything to deposit for  
me add this to it—

I have written to Goddard  
to turn over a check to you  
for \$186 <sup>25</sup>/<sub>100</sub> which please  
put to my account when  
he gives it to you

Yours  
Batchelor

- Everything lovely
- Damned hot
- Big pile of work to get ready
- Excuse short epistle
- Don't forget Luebel's wife's money  
every month and let me  
know every now and then  
what you are ~~doing~~ paying  
so that I can keep this  
account straight
- Hurry all the things
- Letter to Eaton to day

Yours

B.

Aug 9<sup>th</sup> 1881

My dear Edison

In conversation with Herz the other day he said he would loan me the Quadruplex but wanted Green's order as he had some trouble with the N. O. which he wanted to settle so I cabled you to send cable order from Green to have him deliver to me (to be returned) We had no answer to this so as I found out his "Quad" was incomplete and the instrument in a very good condition I cabled you to send new set

also send as<sup>2</sup>many small  
dynamos as possible — Herz  
frankly admitted to me here  
that the reason he did not take  
the telephone in 1877 was that  
directly after he came to Paris  
he was entirely busted and it  
was some time before he got up  
again he seems to be a man  
pretty well thought of here but  
you can judge very little as I  
don't think he has any money  
himself but simply pulls the  
ropes for some syndicate —  
He is on intimate terms with  
Preece — I have had a long  
talk with Preece who I found  
very friendly — he seemed he might

Glad to "bury the hatchet" - He introduced me to Hughes, Sir Chas Bright and Lord Crawford the Chief Eng Commissioner.

Bailey (who by the way is putting an immense amount of energy into this thing) arranged an interview for me with Sir Moncel which lasted 2½ hours - I showed him all the points of economy on the system and he fought a little on some but finally took them all and wanted to meet me to see the apparatus at the Exposition. I met him yesterday and he had his wife with him to translate - I cut the cloth of

the little armature and explained the make of it to him. ~~The ~~points~~~~ was a little astonished at it and its small resistance, he brought a draughtsman here and he drew a chandelier, brackets, boxes for conductors etc. - I was not sure whether your patent was secured here so I cabled you to say whether I could have them shown so: - 'Moncel wants pub - street boxes and armature can we pub local

Batchelor

No 6  
Paris Aug 10/89

Cabled you yesterday to  
cable date of delivery of the American  
patents that cover the French patents  
delivered Paris August 79, and January  
February and June '80. This was  
because that, in order to get an injunc-  
tion it is necessary that the American  
patents should have issued to the party  
asking it. Our counsel in interview  
two days ago said that it is alleged  
that the Sharps patents have been issued  
and yours not. In the absence of copies  
of your patents here, it was necessary  
to have your formal assurance on this  
point. — Whether the fact that all  
the patents invoked by us have not yet  
been issued, will make a difficulty in  
getting injunction, remains to be seen.

Also, it is necessary that the  
original patents should be produced  
in support of the injunction. The

2—  
Absence of these may cause the  
injunction to be raised provisionally,  
i.e., until the production of the original  
patents. Should the injunction be  
granted and should you hear of its being  
raised within a few days, you need not  
be uneasy. The case seems a very  
tight one and if we get it on hearing,  
I propose to go at once for depositions  
and so forth. — The Leon syndicate are  
about to appoint two engineers to  
make report to them on the economy  
etc of the light in your exhibition.  
In interview with Mr. Leon this morn-  
ing the writer proposed to him that  
another engineer should be added  
to their two by us, and that the  
selection on the one side and the  
other should be mutually acceptable  
or a change should be made.

Mr. Leon accepted this, ~~and~~

12<sup>th</sup> Aug<sup>3</sup> As telegraphed last evening injunction was granted yesterday. This morning passed by the Opposition to see if the Maxim people have lamps visible to sea, and finding that they have, telephoned advice to counsel who replied that seizure would be made at Opposition at two P.M. On entering office 33 Ave de l'Opera found your cable saying "injunction" against whom and on what. It was supposed that you would understand the phrase "principal infringer" used in the first cable sent you regarding the matter. The answer "Against Maxim and will be served at Opposition"

4

this afternoon unless you cable contrary" was sent you at ten this morning, and counsel was advised not to make seizure till five this P.M. to give time to receive your reply, should you desire to make one.

Balchelor and Moore have been present, one or both of them, at the interview with counsel, at which the points of the seizure - the patents have been discussed, and are clear in the opinion that the injunction should be granted. Enclosed herewith you will find

<sup>5</sup>  
extracts from Paris journals,  
which have been kept in as  
adv. for several days.

Wilep Batchelor and Moses  
and the Counsel who have examined  
the points, are entirely mistaken,  
and your patents are valuable  
because you have invented nothing.  
The proceeding is a good one, &  
The Exposition raises the  
questions between you and  
Maxim and others in such  
a way that, even if your case  
were a weak one and it.

Is your interest to dodge  
and mystify that course is  
not open. If you have

<sup>6</sup>  
really invented the things  
claimed for you, the policy of  
a square attack in reply to  
the claims made against you  
is the only one to be thought of.  
We have no doubt you wish this,  
and all of us do understand.

Armenegaud, who is not a  
very positive man, and is very  
timid, said squarely to counsel  
that he considered Maxim an  
infringer and that he advised  
pursuing him. In the article  
of Exposition I Edition of 1861, of  
the Catalogue Armenegaud  
tells me that he put in <sup>in the article</sup> the  
four lines which he thinks sum

Up your claims, <sup>infringing</sup> on the lamp  
question, and which he thinks  
you can hold against every  
one, "Edison est le premier  
qui ait fait, et ces brevets  
en font foi d'un filament  
de charbon continu avec  
une distance supérieure  
à dix ohms, dans une ~~vide~~ vide  
maintenu par un globe de  
verre continu dans lequel  
on scelle les conducteurs  
métalliques."

We have paid 3000 \$  
to counsel, Dainton,  
Joris, my husband,  
Parker & Bailey,

(Aug 10)

Translated from the French

By virtue of an Order made by the president of the civil Tribunal of the Seine sitting at Paris the 10<sup>th</sup> of this month registered place at the foot of an application, presented to him the same day and in consequence of the deposit at the Caisse des Dépôts et consignations of the sum of \$1000 francs under the n<sup>o</sup> 83859 as appears by the receipt delivered under the n<sup>o</sup> 16, 867, and of which application, order and receipt copy precedes and at the request of Mr. L. A. Edouard, Election, Avoué et Co. of the Tribunal of the Seine, 65 F<sup>o</sup>ut. Rouvrie, residing domicile in my office.

The undersigned Edmond Doreval, residing in the civil Tribunal of the Seine sitting at Paris, those residing at n<sup>o</sup> 47 bis Rue d'Anvers, there presents himself in Paris at the Palais d'Industrie for the purpose of proceeding in virtue of the said Order to the signing of the various apparatus hereafter mentioned and with the assistance of Mr. Charles Hardelt, Ingenieur des Arts et Manufactures, there residing at n<sup>o</sup> 60 Ruebourg Saint Louis and hereto required in virtue of the authority contained in the said Order.

Being at the Palais de l'Industrie in the Salle G. on the 1<sup>st</sup> floor to the right of the said hall on entering I found a sign as follows:



The United States station lighting Co. Broadway  
System Station. New York.

Fabrication de lampes à incandescence.

On the counter of the exposition was a drawer  
containing several of the lamps alleged to be counterfeit,  
in the middle of the room is a table having two  
concentric circles furnished with lamps. ~~System Station.~~

Having recorded these facts Mr. Cabot  
examined the said lamps as well those in the drawer  
as those furnishing the said lamps table.

During the period with the seizure I informed  
the employees of Mr. Station present at the said  
exposition of the object of my visit and I read over before  
the Order aforesaid and requested them to produce to  
me all the lamps in their possession alleged to be  
counterfeit. The said employees and Mr. Cabot, repre-  
sentative of Mr. Station, formally refused so to do.  
Mr. Cabot applied to Mr. Baynet Commissioner of the  
exposition and on returning declared that he opposed  
and thus in virtue of Article 5 of the law of the 5th  
July last by which only a deposit of seizure could be  
made, to which I replied that that was the sole  
object of the present and in consequence I again requested  
Mr. Cabot to allow us to proceed which he absolutely  
refused to do. I thereupon required the assistance of  
Mr. Baynet Commissaire de Police of the quarter  
whose presence I had already required in vain in

consequence of his absence and who having declined declared that he was ready to assist us and which he did. I then repeated to the said employees and also to Mr. Cabat my request to allow us to proceed, which they again refused. I required the Commissaire de police to assist us and to request them to open the drawers and to lower apparatus above described. Mr. Cabat declared that it was useless to let down the said lattice which he declared was furnished with lamps identical with those he produced and which Mr. Alwardet declared he had himself observed and verified during our operation. On the observation of Mr. Alwardet that it would be sufficient to record the description of the lamp produced I invited him to describe it to us which he did as follows:

This lamp is composed of a little globe entirely of glass completely closed in which is found a filament of charcoal very fine surrounded burning twice in the form of a C. This filament has at two ends a little extended so as to fix itself between the two conductors which maintain it inside the globe. These metallic conductors traverse the globe in glass at the part interior part and the passages are sealed so as to give a perfect obturation of the globe.

Which lamp seeing their refusal to allow a sample to be taken I declared that I left in the possession of Mr. Cabat with charge for him to have

to produce the same when and to whom the same should be required. On the reserve of all future proceedings and sundry rights. The whole in presence of the Commissaire de Place and Mr. Maillardet and further of Messrs Jules Pivore and François Jeffroy witnesses hereunto required and with us undersigned and residing with us, 10<sup>4</sup> Rue d'Orléansville.

And of what priories I have prepared process verbal of which I have left copy for the said Mr. Maillardet as above.

Cost including one sheet at fr. 1,20 and  
meshed at 0,60 fr. fr. 60,00

signed J. Maillardet, Jeffroy  
Chs. Maillardet - In guardian of the Court and  
protat. V. de Kakati and Dorval.

Deposited at Paris the 15<sup>th</sup> August 1886

René J. Maillardet signed

Translated from the French19<sup>th</sup> August 1861

At the request of Mr. Thomas Alva Edison,  
Electrician, Chevalier de la Légion d'honneur, residing  
at New York, 65 Fifth Avenue.

For whom domicile is elected at the place business  
in the office of Mr. Girard in the Civil Tribunal  
of first instance of the Seine who constitutes himself  
for and will appear for him on the present summons  
and its consequences.

I Edmund Dornal Justice etc. have signed  
and at the head of so many copies given copy to Mr.  
Eugène Morel, residing at New York, St. J of Mar-  
sac at the office of the Procureur of the Republic Paris,  
according to art. 9 of the Art. 69 of the Code of proce-  
dure civile, who has read the original.

It of the Order of the President of the Civil Tribu-  
nal of the Seine of the 18 August 1861 register, following  
the Request presented to him, the said Order authorizing  
the plaintiff to proceed to the seizure herein after  
refered to.

It of the receipt of 19 August register in the  
day fr. 50<sup>fr</sup> 5, as a duty of 12<sup>fr</sup> 75 delivered by the  
Clerk of the Court as Exposé et consignations made  
the 19<sup>th</sup> 1861 and recording the deposit of the sum  
of 1000 francs as security to obtain the seizure in

question as asked by the said order of the president  
3<sup>d</sup> of the present Tribunal of signature by me  
on the same 18 August.

About the above request residence and domicile  
and constitution of course I have given summons to  
the said Mr. Morin.

It appears eight days delay according  
to law in addition to the delay for distance before  
the president and judges composing the first Tribunal  
of first instance of the dept. of the Seine sitting at  
the Palais of Justice from 10 o'clock a. m. for  
instance the 28 day, 28 November 1879.

On 17 and 13 April 1880 the Plaintiff took in  
France several patents for the production of  
electricity and electric light.

Whereas by the patent taken the 18 May  
1879 and delivered the 15 August 1879 No 130,910  
the Plaintiff claims as his invention for improve-  
ments introduced in the production of electricity  
and in electric light as well as in the machines  
and apparatus employed therein.

Whereas by the patent taken the 20 March  
1879 and delivered the 20 Jan'y 1880 under the  
No 133,756 for improvements introduced in the  
electric lamps and in the mode of manufacturing  
the same lamps he has specially claimed as his  
invention:

1<sup>st</sup> An incandescent electric lamp formed of a filament of charcoal of great resistance subjected to metallic conductors

2<sup>d</sup> The placing of this filament in a glass globe containing no air.

3<sup>d</sup> The spiral conformation of this charcoal filament

4<sup>th</sup> The means of joining the platine wires to the charcoal filament, and of carbonizing the whole in a close chamber.

Whereas in the certificate of addition of 29 Decemr. 1879 to the patent of the 28 May 1877 he also claims as his invention, specially the means of making a charcoal in paper for the production of the electric light.

Whereas in the patent of the 27th April 1880 delivered the 16 June 1880 No 36088 for improvements in electric lamps and the manufacture thereof he claimed several means of preventing the admission of air of joining the conductors for the constitution of the lamp.

Whereas all these disposition and combination duly recorded by the above patents have been reproduced unlawfully in the lamp which the said Maxim has made and now proposes for sale after patents taken by the latter in France, the 1<sup>st</sup> and 9 October 1880 etc 139,068, the 2<sup>d</sup> 15<sup>th</sup> Decemr 1880

N<sup>o</sup>. 140168, that is to say posterior to the invention of M<sup>r</sup> Lavi.

Whereas the 10 August 1888 the plaintiff presented a Request to the President of the Civil Tribunal of the Seine for authority in accordance with art. 47 of the law of 5 July 1874 to seize by description, the above counterfeited objects as well as the patents de M<sup>r</sup> Lavi as elsewhere.

Whereas in virtue of the order made in conformity by the president of the Civil Tribunal the 10 August 1888 requested the plaintiff has as appears by Procès Verbal of Donal Luvier at Paris dated 10 August 1888 registered with the assistance of M<sup>r</sup> Marcelot Engineer of arts and manufactures and also of the Commissary of Police documents required by the Luvier proceeded to the descriptive seizure of the counterfeited objects at the Exposition & Exhibition at the Palais of Industry Paris.

Whereas the sample of the said device devised by this procès verbal of seizure consisted of a little glass globe entirely closed in which is a filament very fine of charcoal tinned twice in the form of U this filament having its two ends a little extended, so as to fix itself between the two conductors which maintain it inside the globe. These metallic conductors traverse the glass globe in the lower part and its passages are sealed

so as to give a complete obturation.

Whereas if it was not possible in examining the lamp known at the time of the seizure at the palais del 'Industrie to know whether the globe hermetically closed it appears from the very fact of observing patents that they exclude the air from the globe containing the filament.

Whereas this lamp is a serious imitation of the Edison lamp.

Whereas by this imitation Pearson has caused to the plaintiff a prejudice the importance of which cannot at present be estimated.

For these reasons and all others to be supplied in fact and law.

See himself Howard Pearson declared infringer of the Edison lamp patents in France by the patents and certificates of addition taken by Edison the 18 May 20 November and 29 December 1879 and 15 April 1880.

See pronounced the nullity of the patents taken in France by Pearson the 7 October 1880 No. 14068 and 15 December 1880 No. 14168 and all others relating thereto.

Whereas and that the counterfeited lamps devised by the present holder of seizure of 14 August shall be confiscated for the benefit of the plaintiff wherever found in France.

And for the prejudice caused here himself



condemned to pay to plaintiff damages to be fixed  
by certificate.

She ordered the execution of the judgment in  
100 French journals at the choice of plaintiff  
and at the cost of defendant.

That plaintiff further condemn in all  
costs including the cost of the mentions in the  
journals.

She ordered the provisional execution of the  
judgment notwithstanding opposition or appeal  
and without security.

Under all reserves

EXPOSITION INTERNATIONALE  
D'ÉLECTRICITÉ

OUVERTURE

LE  
MERCREDI 10 AOUT 1881

ADMISSION POUR UNE PERSONNE



Entrée par les Portes n° 2 et 3  
Avenue des Champs-Élysées. — Grand Portail

*Les Portes seront ouvertes à partir de midi*

14. Rue de Jussieu  
Paris, Aug. 11. 1889

N.T.A. Edison.

65. Fifth Avenue  
New York, Etats Unis  
d'Amerique.

My dear Sir,

The Exposition opened on the 10<sup>th</sup> in order to allow of inspection by the President and his Cabinet. The exhibitors as much as possible had cleaned up the place but all their efforts did not put the machinery in motion. It was a mere formal opening. We are nearly ready, however, and I believe more advanced than any of the large exhibitions. We had crowds of visitors, among them several of the Legations to whom the workings, manufactures &c. were fully explained. They did not appear to know anything about it, and were very much interested. I have been entertained by Mr. Pargès at his country seat at St. Cloud and have found him, aside from his wealth and influence (which are very great), a very intelligent and engineering man. Mr. Lecoq has been very kind. He asked me yesterday to enquire about the possibility of obtaining a patent from America for his house near the Bois de Stogno. He will pay \$2000 for a so light installation. If it could be managed it would be a good plan to let him have it, Mr. May also took great interest in the matter. My relations with all these gentlemen are very pleasant and at anytime I could personally present any views you might desire to express.

Ducloncel is greatly interested in everything we have out on the table. He and his wife pay us visits at least twice a day. Her influence over him is very great as he seems to rely upon her observation entirely as his eyes are now very weak. He has just written an article for *La Lumiere Electrique* on your system which Mr. Batchelor and I revised, and which Mr. Ducloncel corrected as I called her attention to the uncertain points in the descriptive parts. He has a great admiration for you and I believe she is inclined to bend worship. Mr. Bailey has no doubt written you about Ducloncel's new relations with his paper, so I will not touch on the subject.

Mr. Fabrizi called to see the Salom the day of his arrival and expressed himself as well pleased. The tapestries on the parlor room (as you might call the one from which the coarsest instruments have been excluded) so attracted him, that he desired me to make special enquiries about their prices probably with a view to purchasing some of them. An inventory of the valuables found in your apartment shows them to be worth over 350,000 francs. All this is in strong contrast with the empty coat of Maxim's counter in the *Salon d'honneur* as he advertises the room he proposed to light up. But the blow which

he did not expect came this afternoon. Count Babeland, Bergeri's secretary, came to our room and said that Mr. Maxim's Agent in Paris, who represents the U. S. Electric L. Co., had just come to his office in great astonishment about the injunction which had been put upon Maxim's light. The Count said he was sorry for him, but it was all right if it was discovered. The whole matter has caused quite a furor in the Palace. The newspapers have not yet spoken of it, simply because if you wish anything given to the public (and there's money in it), you must pay first. The reporter openly accosts you with pen in hand (in place of pistol as bourgeois would do) and says they will publish such and such a notice at such and such a price. They do it as unblinking as a bootblack would ask you for his buckle. In fact beggary is a profession here, practiced at times in silk or furs and sometimes in rags but more generally the first. Paris is in this respect sui generis. The foreigner is the natural prey of the people by common consent. It begins as you enter Paris, or for that matter as your food comes into the city, it is taxed in eating it you are taxed and robbed, and as you progress you do it with your hand in

in your pocket. Pay-pay-pay, that is the  
way my dear.

The newspapers must be managed, however,  
so I hope you will arrange some way by  
which we can go it strong with them.

Mr. Puskas arrives in N.Y. to night and  
I hope things will be focussed time enough  
for the Congress.

Mr. Bateman is getting along all right.  
The instruments are all in good condition  
with but one or two exceptions. He hopes  
to have the plant running by Monday; but  
the official opening at night will not  
take place before the 27, so you may be  
sure everything will be working smoothly  
by that time.

Faithfully yours,  
Otto Adloff.

Miscellaneous

The Edison Electric Light Company,

65 Fifth Avenue,

G. Cummings

New York, Aug 12<sup>th</sup>, 1881

North Green, Pres.  
S. B. Eaton, Vice-Pres.  
E. P. Fahnestock, Treas.  
C. Gooden, Secy.

T. A. Edison ~~offer interest~~  
Dear Sir, in "Key"

It seems almost impossible to find you at leisure. I wanted to see you particularly for a few moments to ask if my exhibit (No 19, American series - Cumming Key) has been placed in your dept as I have availed myself of your kind permission in writing directions to that effect to Paris. Since I saw you the Key has proved to be the most rapid in transmission of any in existence. I therefore offer it to you with pride and pleasure to real on your quadruplex in Paris if you desire. It has been tested very thoroughly for the last

two months on the heaviest  
wires single & quad - and  
they have given un failing  
satisfaction. ~~It~~ all the  
testimonials you could desire  
for its rapid & delicate  
transmission & non - sticking  
properties are at your command  
I shall be glad to hear  
from you at your convenience  
The enclosed circular  
give you some idea of  
its claims.

I also wanted to speak  
to you in regard to French  
& other foreign patents  
as I understand your  
Company has a branch  
house in Paris and some  
arrangement might be  
effected.

Very Respt Yours  
Wm George Cumming  
303 East 19<sup>th</sup> St N.Y.

Palais de l'Industrie

Paris Aug. 12<sup>th</sup> 1881

My dear Edison,

Recd. your cables etc. — The exposition was opened but not a single exhibit ready. My telework was not quite finished but shall be running by the 15<sup>th</sup> which will be as soon as any and before the great majority. There is a terrible lot of red tape here — I also find great difficulty in getting anything done here, and not all without great expense. The exhibition has made everybody very independent and if you buy or hire anything they will not let it go without pay beforehand. — I was not able to get a fast speed engine so had to hire one that only runs 80 revolutions, but of course can make that do; although it looks much larger than it would need & if I could have got a fast speed — I have to pay \$200 per month for the use of it and had to pay \$350 to put it in place and run it ready for use. When I first came here our men were being boarded at a very high rate nearly \$18 per week per man I have now got them a cheaper place although the best I have been able to get to \$12 per week — Of course I want to keep them as near the exposition as possible — I have got a man looking round for still cheaper rates — The Electric pen, Book printer, Distinct, pressure relay, expansion relay, Hystograph relay, Telephone duplex,



Electric force, 1 Universal private line printer (the other  
badly damaged but am fixing it) All telephones, are  
all up and working well — Fabri was here and  
(English Light) consulted me about London — I sent Little  
the tailor man over there to see the places that  
Mr Fabri had picked out as suitable to put the  
boiler and dynamo and he will report to me in  
a few days

I have got hold of Biggs of the "Electrician" and  
Kings of the "Telegraphic Journal" and spent yesterday  
in solid hours talking economy of the system —  
They started in very skeptical but have now  
become very much interested — Biggs told me  
he was the Scientific head of the Engineer (and  
between you and I it is a damn poor head) so I am  
trying to kill two birds with one stone —  
Inkman is in every day — Before the Electric  
regulator man ~~said that~~ told the Doctor yester-  
day that ours was the only thing he had ever  
seen that looked like business — There is no  
other exhibition here with a complete system such  
as ours and people are struck with the display  
of conductors and other plant — The two little  
machines look so small at one end of this immense  
building that I am frequently asked the question  
Are you going to light both these large rooms with  
these little machines down stairs  
Yours "Patel"

Paris

17 August 1887.

Dear Sir,

In accordance with your cable I have taken steps  
for retaining counsel in Brussels, at Berlin,  
Vienna & Russia. I will call on Mr  
Fabric tomorrow in regard to Italy. I will also look  
out for Paris within a few days. Also received your  
cable <sup>regarding</sup> the inquiry addressed to you as to  
whether the Alcazar Patent on which he had obtained  
a favorable decision embraced an electric lamp & your  
reply to the same; the inquiry was made because  
neither Mr. Bathelet nor Dr. Moses were entirely sure  
in regard to this point & to put the matter in a proper  
light it was necessary to know it with certainty.  
Yesterday at the same time <sup>as</sup> that your cable there came  
to hand journals from New York reporting Major Bates  
conversations on this subject & fully answering the  
question proposed to you by cable. The main  
point as to the holding of the supposition on Alcazar  
is whether the Patent for the Method of making &  
sealing the lamp <sup>and</sup> ~~was~~ for the continuous carbon  
filament has been issued to you Dr. Moses says he is  
entirely certain on this point and that he has had

it in printed form in his possession. Had Maxim himself left New York so as to have arrived here before Saturday next so as <sup>that we could</sup> to get personal advice on <sup>within the 8 days</sup> after seizure or <sup>by coming with</sup> <sup>which we must</sup> him, the matter could have been brought to an immediate issue - As it is, the summons will be issued returnable in three months from date & in a form that allows coming on Maxim for damages if any shall be caused. We cannot now claim damages because none can be shown.

Last week Dumoussel had a difference with Hertz & resigned his position as Editor of the "Lumière Electrique". He writes me on Sunday & made an agreement <sup>(1)</sup> with him to come with us during the Exposition to prepare articles for us to be signed by him or not as we may desire, <sup>(2)</sup> to work with us in the matters of the Jury & the fugress. We are to have a meeting on Thursday morning to settle the terms on which these services shall be rendered. The negotiations with the Journal des Debats, Le Temps, & Le Figaro are progressing favorably. The Republic has informally agreed to cede to each one of the parties in question one half of one part in the

Syndicate, which gives the right in the total to about one million of francs in the subscription to be made at the time of emission. In addition to this it will be necessary to pay other money coming to the owners of the Patents when the business shall be realised & conditioned of a moderate sum of perhaps 20,000 or 25,000 francs <sup>to cash over</sup>. The matter has been talked over with Batetot, who approves of the arrangement. Yesterday three of the Editors of the Figaro spent the whole of the forenoon & till between 3 & 4 o'clock in the afternoon with Batetot & myself going through the whole exhibit & receiving explanations in detail from Batetot in regard to all the points in the system of lighting - Mr. Batetot's demonstrations at the exposition & elsewhere give great satisfaction & have a decided success as also D. & Mares, but Batetot is a part of all that betattles about, the processes a directness & plainness that make it easy for every one to understand - The case of Luvann is being examined - Claims are made here for Luvann which require careful examination & that all the publications referred to should be in hand before any decisive step is taken - Wrote two days

ago to Bremer & Johnson find out to have thorough search made of certain periodicals quoted here as containing publications made by Swanwick also a general search for anything stated in Special Journals during the last 4 years by Swanwick himself or by any other persons for him in regard to his claims on incandescent light. It is possible that it may be policy to wait before striking Swanwick until after the Assembly of the Electric Congress - also it seems prudent to have communication with several English Electricians who are coming over & to time & pick up their sentiments & draw out of them all that they have to say, so as not to have them solid against us in the Congress. A few days will enable us to get at all the facts & to test the sensibilities of the persons referred to & to act with full knowledge of all the points. The blow struck at Maxims will make it unnecessary so far as business reasons are concerned to be in any undue haste regarding Swanwick.

Yours very truly

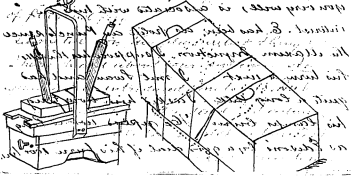
T. A. Edison, Esq.

Puckett & Bailey

Charles A. Edison  
 J. A. Edison  
 63. Fifth Ave  
 New York, N.Y.

My dear Sir,  
 I have the honor to acknowledge the receipt of your letter of the 19th inst. in relation to the temporary opening of the Co.  
 Publication was held last night. Very few lamps were running. Siemens, Brush, a few Jablochhoff candles, an ingenious new German lamp, and Soler's. This last is quite a new

departure based on old materials. It is a combination of arc, incandescence, of white and yellow light, has no regulator and costs 20 cents per hour. It is, in my opinion, the best of them were used to illuminate a room equal to both of ours. They are 1400 candles & each requires two three power.



all the parts are marble, except the cast-iron frame which holds all. The light is absolutely steady, golden yellow, and concentrated on the point to be lighted. To tell the truth, it can be run at any brilliancy desired. The composition of the carbonate of lime gives of itself a very orange light, but when mixed with the arc light it is very fine indeed; but still contains too much yellow. There is no sound to the lamp.

Swan lit up the Congress room after a fashion, with lights that did not give so candle I am sure. We may run these higher hereafter, but as Mr. Cochrane (Illustrated Press Telegraph) writes him I imagine he did his best. Edmonson (who says he knows you very well) is associated with him in interest. E. has been as useful as Punch since the Maxim invention. I suppose he thinks his turn is next. I met Swan and had quite a long talk. I asked him how long his lamps burn. He replied not as long as Edison's by a good deal of his pure incan-

descent. I rather wonder how long they will burn about 45 on the 100-watt scale. I saw, and when first introduced to him, he fought shy. I was rather disappointed. I knew, as we didn't say anything about priority. By the way, I gave Mr. Batchelor some translations from Du Moncel's article (which I suppose he sent you) in which Du Moncel, when speaking of incandescence as developed by you, says, "I saw had tried and had acknowledged his failure over the carbon when you had done the work successfully."

It would be well to send your photograph to Du Moncel. I hope you haven't forgotten the one I asked for Breguet. I met the elder Breguet the other day. He is still full of fun and fire.

Let me tell you the pleasantest thing yet I have heard about your system. An acquaintance introduced me to Mr. Duboscq of the regulator. He said "I admit that the regulator is not to be used for interior lighting; this (pointing to your





Paris  
19 Aug 1887.

Dear Sir,

Have this morning closed & arranged with Demoussé to cooperate with us in the Herbert's Congress & in matters relating to the Exposition generally & to furnish articles for the press either of his signature or to be used by us at discretion without his signature. Have engaged on our part to pay to him an honorarium of 1000 francs a month during the time of the Exposition & 1000 francs on the Conclusion of the Paris Contract. Also engaged to cause him to be put on the Council of Administration as Administrateur or as consulting Member to the Gov. The understanding we have with

the Council of the Syndicate is such that this will not be a difficult matter. In regard to the expenses of arrangements made with the leading Journals here, think we shall be able to show these expenses in an indirect way on the Syndicate without making ourselves liable for any large amount for the expenses of publicity during the Exposition. This is by an arrangement for the Syndicate to admit the gentlemen representing the Journals with which we treat as subscribers in the Syndicate itself with the right of subscribing to a certain proportion of the shares at the time of the public emission. These matters will be finally settled in the early part of next week when Mr. Bow returns to Paris - ~~Three~~ days ago etc.

Barbier called at our Office during  
your photograph & biographical  
article to put in the front of the  
first number of the *Moniteur  
Universel de l'Electricité*, a new  
periodical which he has started.  
Furnished him with your photo.  
Dr. Morse has given him the  
material for the biography. Today  
the Editor of the *Papillon* has  
called requesting also your  
photograph for giving a Portrait  
on the first page & desiring also  
a Biography - We have accepted  
his offer & ordered 1000 copies of  
the Paper for distribution. Every  
one here with whom we talk  
expresses the warmest desire that  
you come here at some time  
during the Exposition & everyone  
commencing with Mr. Berger, &  
all through the Journals say

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that if you would come you  
would have one of the greatest  
receptions that was ever given  
in Paris. Have referred to this  
before but the insistence of every  
one, & the interest shown in the  
matter, make it desirable to  
again call your attention to the  
excellent effect your presence  
would have.

re Maxims. Inclosed you will  
find translation of the Procès  
Verbal of the Session made at the  
Exposition - This afternoon the  
Journées on which the suit  
will be heard is named. In the  
regular course of procedure this  
should require five months (not  
3 as mentioned in previous letter).  
The solicitor chosen by Mr. Roussau  
to act with Mr. Ballouf is the  
regular solicitor of Couudet Bros -  
Couudet Bros are the Counsel

(4)

of Massin. By arrangements that  
are on foot we hope to get the  
matter before us in the month of  
November. The copy of the  
summons in French will probably  
be enclosed in this letter - shall  
not have time to have translation  
made.

Against the judgment of some  
of your friends here we have made  
no answer to the statement made  
by Massin before the League  
~~was~~ made & have made no  
announcement of the League in  
any of the French Papers -  
simply to make the announcement  
would be to advertise Massin  
& the moment for any extended  
statement will not have arrived  
until until your salons are  
lighted at the Exposition & until  
public interest is excited in the

5

Exposition. Beside that, there is  
now great political excitement  
in France similar to that of a  
Presidential contest in the States.  
The date of voting is the 31<sup>st</sup>  
instant. Nothing published  
during the last fortnight or for  
nearly a fortnight to come  
would have scarcely any attention  
thence that everybody is out of  
Paris now & anything now done  
would fall entirely dead. One  
should have played out our  
hand for the advantages without  
having made any impression  
on the public. About the 1<sup>st</sup>  
of September we shall come out  
with full & exhaustive statement  
in the Illustrated & Political  
Papers & the public interest then  
being excited in the Exposition  
the political excitement having  
died away & Paris being full of

6

possibly it will have effect. Have  
but officially copied made of all  
your Patent Patents secured up  
to date. The designs have been  
photographed & the rest is now  
in the hands of the Printer.  
200 Copies have been ordered in  
order that the lawyers & others  
having occasion to study the case  
may do so with advantage & in  
order that each of the Patents  
as may be matter of any controversy  
coming up in the Congress may  
be placed if it shall seem  
advisable in the hands of  
every Member of the Congress.  
While writing this it occurs to  
me that will be well to prove  
the same work for Maxm & to  
distribute the copies of his  
Patents if any dispute is made

7

with your take has only two the  
expense will not be heavy.

Yours very truly  
Pickens & Bailey

Thomas A. Edison, Esq

George W. Smith

8. 100 1881

50000 200

Paris 19 Aug<sup>th</sup>  
No 4. Dear Sir: The cost of all that  
is in the Catalogue for Edition  
is 76425. We propose to calculate  
that one half this must be paid from  
the Seine fund, and one half advanced  
by us, on same footing as all the  
other expenses we are paying, waiting  
final arrangements. He accepts this  
subject to your approval. Please  
to cable "Catalogue" if you <sup>the suggestion</sup> accept  
and "Refused" if you do not.

The Publisher of the Catalogue is  
getting up a little brochure of about  
ten pages, to sell at 2 cents. This  
will contain plans of opposition  
and an Annuaire, or Guide. This  
will be in the hands of every one  
that will visit the Exposition and  
will be circulated in immense  
numbers. We have taken two

pages in this. On one page  
will be the plans of your travels,  
with every table numbered; on the  
opposite page will be a summary  
explanation of your exhibit, with  
numbers corresponding to those in  
the plan. This is being prepared by  
Perkins. — Have also taken  
the last page on the outside of  
this brochure, same as in Catalogue.  
This will cost in total 12000.  
We have engaged for work after  
August 1st, in L'Illustration  
and Le Monde Illustré, with  
a full page illustration in  
each; and shall make full  
articles in several journals  
for same time. Yours, etc.,  
Puckett & Bailey

Department of State,  
Washington, Aug. 19, 1881.

Thomas A. Edison, Esq.,

Menlo Park,

Sir,

N.J.

I have directed to be sent to your address  
a copy of the Reports of the United States  
Commissioners, Paris Universal Exposition, 1878,  
in five volumes; and will thank you to return  
the enclosed form of receipt with your signature.

I am, Sir,

Your obedient servant,

James G. Blaine

MEMORANDUM.

WESTERN UNION TELEGRAPH CO.,

General Purchasing Agency,

New York, August 19<sup>th</sup> 1881.

To Thos. A. Edison, Esq.,  
15 Fifth Ave. N.Y.

Dear Sir: Enclosed please find bill of West. Elect-  
Mfg Co. for 2 Quadruplex sets. Kindly acknowledge  
receipt of same on this bill and return  
as soon as possible to

Yours,  
Wm. H. Austin  
Supt. Supplies.

Mark your Bill No.

Palais de l'Industrie  
Paris, France.  
Aug 20<sup>th</sup> 1889

Residence  
59 Rue la Boétie  
Paris address.  
"Palais de l'Industrie"

My dear Edison.

Enclosed find letter  
to the Edison Electric Light Company of Chicago  
limited with two enclosures. which please  
read and turn over to the Company, if  
there is nothing objectionable.  
I may here say that I keep four  
different accounts at present here they are:-

- 1 The E. Electric Light Co of Chicago Lim.
- 2 Mr A Edison
- 3 Mr A Edison Autographic Ld. Co
- 4 Mr A Edison One Willing Co.

I can produce bills for everything I have paid here  
and the statement shown in schedule with  
letter & Lm includes only those relating to  
the "Light". The other accounts are so small that  
it is not worth while giving a statement of.

Yours

Balchett



Palais de l'Industrie.

Paris - France.

August 19<sup>th</sup> 1881

Cable address

"Antares Paris"

The Edison Electric Light Co of Europe Limited.  
New York.

Gentlemen,

By virtue of the power vested in me by your Executive Committee on the 19<sup>th</sup> of July last to draw such sums of money as I might need from Mr. Leon of Paris for the expenses of the exhibition of the Edison Electric Light at the Paris exposition I have this day drawn seventeen thousand seven hundred and thirty francs and fifty centimes to cover bills already paid by myself on this account and which are in my possession -

I enclose copy of my letter to Mr. Leon, also copy of receipt for amount received also copy of schedule of A/C furnished to Mr. Leon with my application.

Very respectfully yours  
Ed. Westinghouse

two enclosures,

Copy of schedule to Aug 19 1881

|                           |                       |
|---------------------------|-----------------------|
| Sundry expenses           | Feb. 932.15           |
| Freight bills             | 230.50                |
| Large engine and boiler   | 2534.75               |
| Chimney and setting       | 2701.20               |
| Carpentry                 | 1000.00               |
| Hauling expenses          | 897.30                |
| Power for small machines  | 2509.25               |
| Labour                    | 368.62                |
| Board and expenses of men | 1660.67               |
|                           | <u>Feb. 15,334.44</u> |

Correct  
Laboratory

1881. 21 August  
received by mail  
from the printer  
of the work.

Copy of Letter to M. Lenoir

Paris 19 Août 1889

Monsieur Eli Lenoir

Paris

Monsieur,

Conformément à la prescription  
qui lui a été confiée par décision du conseil  
de the Edison Electric Light Company of Europe  
limited, datée du 19 juillet dernier j'ai l'  
honneur de vous prier de vouloir tenir à ma  
disposition la somme de Fr. 17,730.50  
à payer sur les frais à faire à l'Exposition  
Electrique suivant état des dépenses ci-après  
indiqués.

Recevez, Monsieur, mes salutations em-  
pressées.

Charles Stein -

Copy of receipt

Reçu de Monsieur Eli Lenoir, au nom et  
pour compte de the Edison Electric Light  
Company of Europe la dit somme de  
dix sept mille sept cent trente francs  
cinquante centimes

Fr. 17,730.50

*List of Certified Copies of American Patents  
sent by Express to Paris Aug. 20. 1881*

| <i>Case</i>       | <i>No of Patent</i> | <i>Patented</i>     | <i>Date</i>   |
|-------------------|---------------------|---------------------|---------------|
|                   | 219,628             | J. A. Edison        | Dec. 16. 1879 |
| Application Filed | Feb. 5-80           | " " "               | Jan. 28. 1880 |
| "                 | May 12. 79          | " " "               | Apr. 21. 1879 |
| Patent No.        | 224,329             | " " "               | Feb. 10. 1880 |
| "                 | 230,253-            | " " "               | July 20. 1880 |
| "                 | 228,878             | " " "               | Nov. 27. 1878 |
| Application Filed | Dec. 9. 79          | " " "               | Dec. 4. 1878  |
| Patent No         | 227,228             | " " "               | May 4. 1880   |
| "                 | 227,227             | " " "               | " " "         |
| Application Filed | Feb. 5-80           | " " "               | Jan. - 1880   |
| Pat. No           | 244,287             | Joseph Abbot        | July 12. 1881 |
| "                 | 244,481             | Charles C. Perkins  | July 19. 1881 |
| "                 | 244,255-            | Alto Kallgren       | July 12. 1881 |
| "                 | 244,581             | Jugoning & Masin    | " 19. 1881    |
|                   | 244,462             | Alto Kallgren       | " 19. 1881    |
|                   | 244,291             | Charles C. Perkins  | " 12. 81      |
|                   | 239,942             | Azram S. Masin      | Nov. 2. 1880  |
|                   | 244,331             | William Stanley, J. | July 12. 1881 |
|                   | 230,153             | Azram S. Masin      | Aug. 10. 1880 |
|                   | 228,546             | " " "               | June 8. 1880  |
|                   | 234,886-            | " " "               | Nov. 28. 1880 |
|                   | 230,954             | " " "               | Aug. 10. 1880 |
|                   | 244,482             | Charles C. Perkins  | July 19. 1881 |
|                   | 228,543             | Azram S. Masin      | June 8. 1880  |
|                   | 230,310             | " " "               | July 20. 1880 |

|                              |                 |               |
|------------------------------|-----------------|---------------|
| 228,524                      | Guam S. Mason   | June 8. 1880  |
| 244,277                      | " " "           | July 12. 1881 |
| 230,309                      | " " "           | " 20. 1880    |
| 228,545                      | " " "           | June 8. 1880  |
| 218,167                      | Thos. A. Edison | Aug 6. 1879   |
| 227,229                      | " " "           | May 4. 1880   |
| Application Filed Dec 11. 79 | " " "           | Dec 8. 1879   |



were here when he came. Capt. E. said to me when  
he left "Oh! I would like to give ten years of  
my life to the study of electricity. The way  
enthusiastic men your enlighten.  
Mr. Burger told me tonight would be considered  
the opening night for the government and the  
pres. that Mr. Gambetta and Lord Sarg would  
attend.

and tonight added all more and more light  
Edmunds, Evans, Parker, (whom you know)  
also illuminated the Salle du Congress and  
the adjoining lunch room. Altogether he had  
more light than we, but the effect was very  
poor, and every declared it far inferior to ours.  
However, it required the impossibility to discover  
that our own superior, being as much better  
Edmunds has a unique style of chandelier which  
is quite pretty. These spiral like arms curving out  
from a center and lamps suspended at intervals.  
None each lamp has a cap of flange cut  
glass like a drop shade. It is very light and  
pretty. The Director of the telephone central  
station said to me that a scumbling band  
was about the lantern light which you do

have and found it very all right and well  
not even in corners. The lamps are smaller  
and seemed to be in thousands equal  
light to our 48 candle power.

Altogether illumination was the excellent  
thing you ever saw. The central light  
was a ring of lamps with an end  
discharge running at one side from  
about 1/2 up to about 12 candles with  
other two broken lamps. Each a  
mass of wires did not. The lamp  
was in a hole and he has fallen out  
the hands of the Philistines.

You have received news of the accident  
to the lamp by cable. It  
appears that some of the men  
were on the roof of the Palace and  
came down carrying from one of the  
light fixtures the working lamp was  
falling and they threw it on the  
man, who called the police to take  
one of the building and the other group  
the chandeliers in their hands and some  
half dozen were crawling on

the roof of the Palace and  
came down carrying from one of the  
light fixtures the working lamp was  
falling and they threw it on the  
man, who called the police to take  
one of the building and the other group  
the chandeliers in their hands and some  
half dozen were crawling on

after the other before the canal could be made  
known. Burger came in great consternation  
to Ralph, and said he wanted to know  
what safeguard should be adopted, and  
when he was shown the cut off system  
(as Johnson proposed to call the safety  
Chute, as name we gave to Du Roncel)  
he was perfectly satisfied. In day  
the whole Palace has been speaking  
of the fear. Honour for our side!  
The Commissioners sat to day and ap-  
portioned the representation by com-  
ties on the basis of France gets 10  
Belgium 11. Germany 10. England 10.  
U.S. 7. Italy 6. Russia 5. Sweden 5.  
Switzerland 4. Low Countries 3.  
Spain 2. Austria 2. Japan 1. Prussia 1.  
The smaller of the European governments  
are in consultation, and receive bearing  
from the United States. We are organizing  
our campaign. *Parti peuplé* group (Paul  
Otto Muller).



Paris

16 Aug 1887.

Dear Sir,

Enclosed please find copy Minister's Official with  
your Portrait & other matter relating to yourself & your  
Exposition. Have taken 3000 Copies of the Journal to  
send out and to place on the Tables at the Exposition to  
give away to persons who pass. As Mr. Barbet is an  
active man have made arrangements also to retain  
him for getting out articles during the Exposition. Have  
arranged with the Figaro that no publication will be  
made in the Journal as the expressions of the Journal  
in connection with the Exposition lamp except in  
your favor; also that some day next week following the  
opening of the Exposition the leading Articles of the  
Journal, of 2 or 3 Columns length, will be devoted to  
your exhibit of light in the Exposition. Also that in  
the Reports published in the Reports Columns prominent  
shall be given always to your exhibit <sup>(the Figaro)</sup> a month later  
in the midst of the Exposition they will issue one  
number of the Journal wholly given up to you & to  
your exhibit with your Portrait on the first page followed  
by a biographical sketch, a rapid review of your inventions  
generally, followed by an exhaustive description of the

electric lighting, illustrated by a complete series of cuts. This last would be an affair of 100,000 francs if treated on the ordinary basis. The consideration promised to the director is the right to subscribe in the Syndicate for one half of a share in the emission to be made & also an engagement that he shall enter into the administration. Shall also hand to the Editor who is detained for the exposition 1000 francs tomorrow or Monday and shall make further acknowledgment during the course of the exposition of as much more, so that the cash outlay on our part will be say 2000 francs. The Thienpa will give tomorrow an account of the private <sup>and</sup> exposition which is to be made tonight for the Press and for invited guests only. A similar arrangement to that with the Sigaro, is now concluded and the article of tomorrow will be devoted mainly to give salubrit putting in only enough of the others to avoid the appearance of having been made specially for you.

The Journal des Debats will publish an article of 3 or 4 columns on <sup>Monday next</sup> ~~the progress of the~~ which is to be prepared by Mr Dumourel. They will continue to publish articles & notices to any reasonable extent that we may communicate. The basis of the Agreement is the same as with the other 2 Journals.

These three Journals represent very nearly everything in the Paris Press worth serious consideration & you will remark that the arrangements are made without actual outlay either by us or by the Syndicate to any considerable extent -

I have addressed a letter today to Mr. Flew requesting the Syndicate to engage to pay me half of the cash disbursements in addition to the Concession to the Directors of the three Journals above named of one half of the part to each. The latter had been informally agreed to before the commencement of the negotiations with this Journal & the whole arrangement only awaits the return of Mr. Flew to London to be put in a definite form - It will be necessary to spend a moderate amount in the minor Journals from time to time, but it is our intention to limit these expenses quite strictly to the publications such as the Moniteur Officiel copy of which is enclosed & the Papillon of which we have already spoken where we can fill the prominent place. I have up nearly the whole Journal & take a large number of copies to give away & to scatter amongst the visitors to the Exposition - The result of all these arrangements if the Exposition comes up to the

promise, will be that pretty much all the impression will be with the public in regard to the reputation that Edison exhibits -

Each one of the large Journals above named have detailed a competent person to make a thorough examination of your whole exhibit, & Mr. Batchelor has explained to them in great detail taking up with each one the greater part of a whole day.

While writing the above the Mr. Turner who writes the Cassier's Magazine in the Times & who holds a high position here & is outside of the Journalistic Staff of the Times has called & the Writer has made an appointment for him next Tuesday to go through your exhibit with the same detail - You can count on solid work from him, quite as good as that done by Mr. Sumner.

Very truly yours,

Ruske, & Bailey

Thomas A. Edison, Esq

(4)

Paris  
24/ 26 August 1881.

Dear Sir,

Enclosed herewith please find copy of letter sent to Mr. Demouzel. In pursuance of the arrangement made with Mr. Demouzel he has furnished us articles which we have given for publication in the *Revue Geyette*, *Berlin Tagblatt*. Arrangements have been made for passing one in the official German publication. Have started negotiations with Germain with a view to have him give a conference (lecture) on your system of electric lighting. He is considered the most brilliant lecturer on scientific subjects in Paris. Shall have him with us unless his own electrical interests prove too strong an obstacle. If we fail in getting him shall probably have Professor Courmeu of the *École Polytechnique* who also stands very high. Called you yesterday asking when Cuto would be sent. The Publisher of the *catalogue* is about getting out a second edition. He said yesterday that he would wait 8 or 10 days for your Cuto to get here.

The Engineers chosen by the Syndicate

visited the Palace today (24<sup>th</sup>) & return again towards  
the evening to make arrangements for Commencing  
their examination. In the course of a few days  
we shall have an Engineer to put with them.  
26<sup>th</sup> Aug: Referring to what was said in a previous letter  
in regard to the taking of Patents here & elsewhere  
in Europe ~~it was found~~ would it suit you  
to make an arrangement with young Butcher  
to get up the Patents for Europe, we profiting  
of his presence here for putting him in  
relation with Armand and with Patent Agents  
in other Countries so that the business can be  
arranged intelligently - Have already talked  
with him with reference to this, not only with the  
idea of bringing about such an arrangement  
as here proposed but also to send him mixture  
in the matters pending with the Mexican people -  
He is the keenest fellow that there is on their side  
& I find from conversations with him that his  
range of examination of Patents relating to this  
subject is altogether beyond that of any person  
here - If you have the same view as to the

desirability of detaching him from the  
Maxim interest, Cable as soon as you  
get this "Right Butler." If not, you need  
not take any notice of this and I shall not  
follow the matter further - You know of  
course Butler's relations with Pope & with  
Baldwin & Co -

Very truly yours  
Puckett & Bailey

Thomas A. Edison, Esq

7

Paris 22 Aug. 1881

Monsieur le Comte Du Moncel.

7, rue d' Hambourg à Paris.

J'ai l'honneur de vous rappeler notre conversation de l'autre jour dans laquelle je vous ai exprimé le vif désir de Mr. Edison et de ses amis and myself d'avoir votre concours dans ses affaires d'électricité qui sont représentées dans l'exposition d'électricité au Palais de l'Industrie. J'ai eu l'honneur de vous proposer de vous donner votre concours pour un Journal électrique qu'il est notre intention d'établir sous peu et aussi de nous aider dans la représentation que nous désirons faire des inventions de Mr. Edison au Congrès électrique and dans la Presse Scientifique and populaire de votre plume-habile. Vous avez bien voulu donner bon accueil à toutes ces propositions and j'ai prié de vous faire allouer pour vos déplacements un honoraire of Mille francs par Mois comptant pour les trois Mois de l'exposition and de prélever sur l'affaire que nous faisons avec un Syndicat Français la somme of dix Mille francs sur ce que nous réviendra Je vous ai prêté aussi de nous permettre de nous servir de votre nom soit dans un Bulletin d'administration soit comme electrician consultant avec la lettre and les traitements qui composent votre position. Pour ce qui concerne le Journal électrique aussitôt que les dispositions nécessaires



No 10

auront été prises à New York j'aurai  
l'honneur de vous écrire de nouveau de ce  
sujet pour arrêter les conditions & en  
attendant je vous remercie infiniment de  
la promesse de votre concours -

Avec la bonté de m'écrire un mot pour  
dire que nous sommes d'accord sur ce  
qui précède & agréer Monsieur l'assurance  
de ma considération très distinguée -

J. F. Bailey

[ENCLOSURE (TRANSLATION)]



Paris 22nd. August, 1881.

Mons.le Comte Du Moncel

7 rue d' Hombourg a Paris

I have the honor to recall our conversation of the other day in which I expressed to you the desire of Mr. Edison and of his friends and representatives to have your co-operation in his electrical affairs which are represented in the Electrical Exposition at the Palais de l' Industrie. I have the honor to propose to you that you co-operate with the Journal of Electricity which it is our intention to establish at an early day and also to aid us in the representation we desire to make of the inventions of Mr. Edison at the Electric Congress and with your skilfull pen in your popular scientific press. You have kindly entertained all these propositions and I propose to make you an allowance for your trouble a salary of one thousand francs per month in cash for the three months of the exposition and to reserve from the business of the French syndicate the amount of ten thousand francs when they make returns. I beg you also to permit us the use of your name whether in the Administrative Council or as Consulting Electrician and moral and practical support compatible with your position. As regards the Electrical Journal as soon as the necessary arrangements have been made in New York I shall have the honor of writing you again on this subject to confirm the conditions, and in the

[ENCLOSURE (TRANSLATION)]

meantime I thank you sincerely for the promise of your assistance.  
Be kind enough to write me a word saying whether we understand each  
other on the foregoing, and please accept my distinguished con-  
sideration.

J. F. Bailey.

MEMORANDUM.

To Thos. A. Edison, Eng'g.  
65 Fifth Ave., N.Y.

WESTERN UNION TELEGRAPH CO.,

General Purchasing Agency,

New York, Aug 30<sup>th</sup> 1881.

Dear Sir: On the 19<sup>th</sup> inst. I sent your bill  
 of The West. Elect. Mfg Co., for 2 Quadruplex sets,  
 with request that it be certified and returned to  
 me as soon as possible. As yet it has not come  
 to hand, so please give this immediate atten-  
 tion, and oblige

Yours,

Wm. H. Kramer  
 Asst. Suppl.

Mark your Bill No-

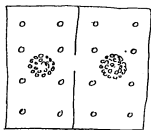
Paris - Aug. 20<sup>th</sup> 1888

My dear Edison.

Last night we experienced what the parrot said he had with the monkey "a hell of a time". The half light machine stripped off the brass wires and before we could do anything it tore off the camera and bent up the lens considerably. This occurred at 10 $\frac{1}{4}$  o'clock. We immediately cut the belt and ran till 11 with the full light machine on the 16 3 light chandeliers. Our rooms were densely packed so they are every night but the short time we were stopped prevented any disturbance - At 11 we took out the armature and commenced the fixing of it and at 5 o'clock tonight we began to run and continued till 11 without further trouble. I never let the boys leave it until it was complete having all their meals brought in to them and it was a great disappointment to some of our competitors to see us come up to the pole at 9 hours before time & run all night. These armatures run a little too close to the field and I think it would be a great deal better if you would give them a hundredth of an inch more when turning them out - Both my armatures touch the field when running full power and I am picking up a firing. We'll take a little out

of the fields— In cutting they help to increase  
the heat. Our exhibit is made by

2 handsome glass chandeliers with 60 lights  
each, driven by the 2400 machine, and 16  
of our 3 light chandeliers  
placed as in sketch driven by  
the 110 Volt machine —



Swan lights the next room  
to ours with 425 lights  
about 300 of which are festoon  
round the walls the rest in  
pendants holding about 20 each near  
middle of room. His lamps are very  
irregular and ever since we have been here  
he has been working them out. They are  
very irregular indeed yet and as we have  
a door in our room that leads into theirs we  
never fail to point out this difference to  
visitors by first taking a good look at  
Swan's and then turning round to our  
chandeliers where we have 60 in a track;  
~~and~~ Although we never picked them out  
there is not a particle of difference in  
their intensity — Some have burst as yet  
but of course it is hardly time for that —  
Mr. Leon was in for the first time yesterday  
and congratulated me on the success of

the light as compared with others - I went round  
to Swan and Maxims' with him and pointed  
out their defects which he appreciated highly.

They can plainly see that we have got the  
system complete whilst others have only  
got a lamp or a machine, and even their  
lamp does not begin to compare with ours.

We have lately rubbed against the  
"Blasted Royalty" in the shape of King  
Kalakaua who expressed himself very  
much pleased with the light. He showed  
him after the singing telephone and the  
Holograph - He could keep these fellows  
easy enough to see all the apparatus but  
there is always such a devil of a crowd  
in the place that they want to get away.  
I have hired two men who speak French  
and German to do nothing else but explain  
the things as the boys show them -

Gambetta has been here and expressed  
his intention of coming again in the  
morning to have it all explained to him.  
I believe he is a very large holder of Gas  
shares -

I saw a letter from Edison  
to Mr Fabri in which he said you had  
come to the conclusion to manufacture  
isolated plants. Or as to supply those people  
now who will take your light when

You can supply it from a station, for instance  
"Hins and Hetchum" This I think is a very good  
idea we have numerous applications here  
for it and if they could be supplied and  
terms fixed there are a great many places I  
am sure that it could be put in in Europe  
immediately - Bailey has applications  
from Brussels, Vienna, Lyons etc and if  
we do not supply them of course Swan  
and Maxim will. It takes so much time  
to make the plant and put central station  
in operation that we ought to do something  
to secure the people beforehand I think  
also that it will be very much easier to  
form a company in any of these cities  
if a few people are using it -

I hear Brush has sold his light here  
for £2,000,000 to Credit Lyonnais -  
The syndicate have appointed their three  
engineers to go over our plant, one of them  
is 'Olerae' of carbon pressure, notoriously  
however, as Bailey says he is a great friend  
of us and will do anything for him I  
suppose he is all right. We are to appoint  
two of whom Amengaud the patent  
agent is one. I have had two or three inter-  
views with these engineers and at present we  
shall have to educate them up to what we



5  
have got before we ~~make~~ any tests but I  
have no doubt we shall be able to convince  
them that we have something worth securing.  
Gas here is sold at \$1.80 per 1000 feet there is  
an enormous lot of it used in the streets and  
places of amusement but the public generally  
do not give it the place it would have if it did  
not give so much heat and spoil the decora-  
tions of the house the whole of Paris is supplied  
by one company who have a monopoly of  
the laying of mains etc which lasts  
so years more but the city reserve the right  
to break this contract if any better method  
of lighting should come up — Of all  
places Paris should be the best as every  
house is about 7 stories high with stores  
on the ground and private families in every  
floor each of whom would take the electric  
light where they now use candles in  
preference to gas because of its high price,  
deleterious effects, and above all the trouble  
expperienced with the monopolist company.  
Let me know your views about these  
isolated plants.

Yours  
Batchelor

Mr J. A. Edison

65.. Fifth Avenue

New York.. Etat Union d'Amérique

14. Rue de Valenciennes

Paris, Aug. 31. 1881

My dear Sir:

The night before last was a memorable one. The Lyricists attended largely. They were delighted. Mr. Lion said to me repeatedly. I am gratulated you on the success with which your light is being received by the public; Mr. Edison seems to be the idol of the visitors, his shrine is always so full. Maxims: when the night of the opening at his lamps burn for five minutes only) let up the vast room apparatus to him with lights of about six candle power on an average. I say let it up because you could see and recognize a friend across the room, but that was all. Why, if you could hear your Phonograph (which a French manufacturer has made with automatic attachment and operates on one side of Maxims' room) farther than you could see it!! How felt as if you were going into the vaults of the Pantheon where so many illustrious men are buried. There was nothing going on. Not a drum was heard, not a funeral bell was rung away from the corpse. Luminous lamps were much better off. They were lit with much light and many lamps; but that is all the most partial critic could say. Having all the most partial critic could say. Having lamps of 20 and 5 candle power respectively, hanging on the same string didn't look so

I told Mr. Berger, as he emerged from the Congress room into ours with a party of distinguished visitors, "life is a system". Balala had gone with some one to see Edison's light. Leon had departed and every one satisfied when to our horror the central small light chandeliers burned and went out. We had been looking for something to happen to the 110 other machines, it had split a good deal but it hung on very well by lowering the speed a trifle; but here we were with the disc machines in trouble. Investigation revealed that the middle binding were had popped and had torn off the envelope which they jammed the armatures. It was 10.30 o'clock: the rooms are cleared at 11. I identified our Mr. Leon reassured upon the scene. As he entered he noticed that the two Barons de Rothschild were in the further salon. They were conversing with a number of the syndicate. Mr. Leon said let us suppose you may be called upon for explanations by our friends. As we ~~suppose~~ need we could see that the situation was critical. The Rothschilds seemed to look at things dubiously. At this moment the police began to close the doors. The money kings went away and our friend Paul as a ghost told that a horrible accident

All Paris will talk of this tomorrow. The people of Paris are a ridiculous, slavish, stupid set. What could I say! I told Rothschild our big machine had not arrived - the whole thing was temporary. I did not mention the slipping of the belt (viz) delay could be forgiven but not an accident. Rothschild said "I still prefer my bee Garcel but I will come back towards the end of September." Horro fatidic!  
We sat up till next morning taking the bars. The next day early we were at it again and all day long. Reports of one failure were circulated over the palace before we received visit from all who might be tempted by it. However, we disappointed them all by resuming at night from the moment the Exposition was opened. This is dangerous work without a spare machine judging by the effort I don't know what might be the disadvantage to us if an accident should really happen.

In haste for the mail.

Faithfully yours

Otto Selloves.

26-5-2  
Paris, 33, Ave. de l'Opera.  
August 1881

Dear Sir,

Your cable approving seizure Maxim received this morning, also one regarding the cabling to Mon Journal. The news was given to day to the Herald and Chicago Times. Your attention is called to the difficulty always made here when your patents are in question, in regard to the imperfect French, and to defects of form in which the specifications are couched. In the consultation with M. Galstof, the most serious difficulty in regard to the seizure of Maxim, i.e. what made the result of a suit the most doubtful, was the fact that

the most important part of the four French patents involved had been taken by Sorrellle Agent in Paris as a certificate of addition, when it ought to have been taken as an original patent. Mr Brandon, Mr. Sorrellle Agent here is entirely obliging and we should not like to be quoted in the matter. The writer called your attention to this subject more than two years ago as you doubtless remember, telling you that your telephone patents came near being rejected for similar defects. There is no doubt whatever that the force of your patents is much weakened by their being taken by any Agent of American patents. They would be much stronger if you would leave them.

taken, in each country, by persons native in the country, and of representation and protection. There are certainly serious defects in all your patents taken as at present, which may, if they come to a decision in the courts make the difference of success or failure for your case. Besides these real defects you have against your patents the whole of the esprit de corps and the personal bias of the native against the foreigner who is an interloper. This is unreasonable, but it exists and is a fact, and your attention is invited specially to the recommendation to make change in the method of taking.

4  
European patents as early as possible.

Dr. Moser has doubtless written to you of his trip to the Ville de Blanc. Today a large builder of Machines at the City of Auzerre has called at the office to see about getting a plant for his workshop and also in regard to substituting the G.S.O. for gas in the City of Auzerre, (about 20,000 inhabitants). It seems the contract with the gas company expires in next year. We have sent him to the Exposition and shall put the case on file with other applications, for such disposition as you may see fit to make of it.

Yours very truly,  
Parker & Bailey

Thomas A. Edison & Co.

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This message is an UNREPEATED MESSAGE and is delivered by request of the sender, under the conditions named above.

A. H. BRETHER, Sec'y.

101 NORVIN GREEN, Brooklyn

Dated March 2, 1881

Received at 791 BROADWAY.

A. D. Insull,

68-5 ave

READ THE NOTICE AT THE TOP.

Going to New York  
with instruments for  
Paris uniform

J. F. Randolph

*Ed*

THIS TELEGRAM HAS JUST BEEN RECEIVED AT THE OFFICE IN

791 BROADWAY, near Tenth Street,

WHERE ANY REPLY SHOULD BE SENT.

Direct Wires.

1015  
Paris; 2<sup>nd</sup> September 1881

Dear Sir,

The examination of the situation of the patents of  
Swann in France and England shows the following:

In France there is one patent of 14<sup>th</sup> December 1880  
for improvements in Electric lamps and in the materials employed in  
their construction. Another dated 17<sup>th</sup> December 1880 for improvements  
in Electric lamps and the various things belonging to Electric lamps.  
The dates given here are the dates of the deposit of the demand for patent  
and not the date of delivery.

In England his patents are dated 2 January 1880 for  
improvements in Electric lamps; 10<sup>th</sup> January 1880 for improvements in  
Electric lamps, 29<sup>th</sup> November 1880 for improvements in Electric lamps,  
1<sup>st</sup> December 1880 for measuring Electric currents, 2<sup>nd</sup> December 1880  
for improvements in Electric lamps.

The situation of Fox as to patents is as follows in  
France:

25<sup>th</sup> October 1879 patent for improvements in the  
application of Electricity for lighting and heating and in the apparatus  
proper for such application. Another patent 20 February 1881 for  
improvements in Electric lamps and Electric lighting.

In England there is a patent dated 9 October 1878  
for improvements in the means of conducting measuring and  
distributing Electricity. 12<sup>th</sup> October 1878 for improvements in the

application of Electricity to heating and lighting. 14 November 1878 for improvements in means and apparatus for producing, distributing and measuring Electricity. 20 March 1879 improvements in the means and apparatus for obtaining Electric light. 28 August 1880 for improvements in Electric lamps and in the construction of their several parts.

The lamps shown by Swan in the Exposition are very uneven in their intensity, they being generally about every third or fourth carbons hardly in a state of incandescence and the lamps at the extremities of the cords less brilliant than the others. We have observations that the lamps are very hot. They are shown on cords at a considerable light height and in a way that on the whole produces a pleasing effect on the eye and draws out many compliments from visitors.

The Fox lamps make very little show. It was a Fox lamp that communicated the fire to the decorations, cable of which was sent to Quaker. We are in receipt almost daily for a number of days past, letters and publications regarding Swan which are forwarded by Brewer & Jensen. I shall get to the bottom of the Swan claims as to early publications relating to the incandescent lamp and early in next week will push the case forward to seizure, if Counsel advises it as in the case of Mason. The same course will be taken in regard to Fox as we understand it to be your desire to have such proceedings taken in all cases where there is good ground for them. Armstrong is of opinion that the seizure of Mason was most opportune as he thinks Mason would very soon have taken a suit demanding the nullity of your patents,



which with reason or without would have been very embarrassing  
and would have destroyed the effect of any subsequent proceedings  
on our part.

Very truly yours  
Oscar F. Bailey

20. 2/10

<sup>3</sup>/<sub>6</sub> Thomas A. Edison, Esq.

No 16

- 2.26 -

PA

Paris,

2 Sept 1887.

Dear Sir,

In letter sent you last Monday one consideration for putting in an immediate appearance in various parts of Europe was forgotten. At the Exposition you have shown out entirely your hand & lots of people are taking note of everything you show, some of them making careful designs and unless you put them in practical operation at once, it will be found in full blast worked by other people and a series of lawsuits will be the result, the others all the time using your inventions - Ruska will receive by this mail the details of the proposed arrangement called to him yesterday & which he has probably mentioned to you. The applications for isolated plants are now very frequent. People come here & say they have seen the light at the Exposition & that it is the only thing that seems to be complete & they want to make orders immediately - Natanson has advised accepting some of the orders, one for example is from the Engineer of the Government powder Magazines, another is for a large shop using 1200 gas burners, another for a factory in Belgium requiring 300 lamps - Separate letters will be written to you in regard to some of these plants by this & the following mails - We are doing a great deal with the Press & the greater part of every

afternoon is now taken up with the visits of various persons connected with it. Artists are arranged for in a number of German Journals & also with the leading Journals of Paris.

The Syndicate has ratified the arrangements made by us with the Figaro, the Journal des Debats & the Temps. We are passing articles now in several of the minor journals copies of all of which will be duly forwarded to you. Have become intimate here with the representative of the German Official Exhibit who is a telegraph engineer and the <sup>who has put up the first German display of apparatus</sup> German Ministry of War named Goffe. He leaves this evening for Berlin & have made ~~of~~ arrangements with him for the publication in the German Journals of various matter that we are having prepared. He is working for us with the German Electricians who are coming to the Exposition & brings to the exhibit tomorrow Professor Dr. Zetzsche, Professor Schellen of Cologne whom he has made. Conversant of already. Have also made the acquaintance of the representatives of the Strasbourg Telegraphs & through him we have a proposition to light the new Railway Station at Strasbourg employing about 2000 lamps. Have told him that we would endeavour to have the Machines &c for the plant within 3 months from this date. He

also offers to get the lighting of the Theatre at  
Strasbourg. ~~2 Sept. p.m.~~ This morning at the Exposition the  
Chief Commissioners of the German Exhibit with  
Professor Zetzsche, Mr. Naumann, the Engineer  
of the Bavarian Government, Monsieur Karsis the  
Commissioner of the Austrian Government & Dr  
Christens of the University of Berlin, Mr. Hegener  
the Chief of the Gas Works of Cologne have  
been through your exhibit with Mr. Batchelor.  
Mr. Hegener comes here officially on behalf of the  
City of Cologne to make examination of the various  
Systems of Electric Lighting. The City of Cologne  
is itself the owner of its Gas works & Mr  
Hegener says that if the satisfactory tests are  
made as to the economy of the light the gas  
will be at once replaced by it. These  
gentlemen desired to see tests of the lamps  
this morning, but the photometers and the  
dynamometers were not complete, so we have  
taken their addresses & have to make an  
appointment four or five days hence for a  
series of experiments & tests at which they will  
all be present - Have made arrangements for  
a Correspondence with Mr. Hegener, who returns  
to Cologne tomorrow, but will return here  
when the tests to be made by the Syndicate

(4)

are in progress - Mr. Vernier whom we showed through the other day, has just wired to Battelet that the fount de Paris will come tomorrow at 10 o'clock to visit your Exhibit. The applications for lighting, become so numerous that hereafter we will make no mention of them only in exceptional cases where Mr. Battelet agrees that for one reason or another special attention should be given & effort made to finish at an early date - Inclosed in this Mail is several journals containing articles relating to the Exposition or to yourself.

Very truly Yours

Puckett & Bailey

by W.R.

Thomas A. Edison, Esq.

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A. R. BREWER, Sec'y. NORVIN GREEN, President.

Dated Memlo Park, N. Y. 1881.

Received at 791 BROADWAY. Sept 13

To Chas Smith

65-5 Ave

make copy long letter  
to Batchelor & send it  
to him by steamer leaving  
tomorrow you will find the  
free copy in Copying press  
drawer you will see what  
time French mail closes in  
post office notice in graphic

THIS TELEGRAM HAS JUST BEEN RECEIVED AT THE OFFICE IN

791 BROADWAY, near Tenth Street,

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This message is an UNREPEATED MESSAGE and is delivered by request of the sender under the conditions stated above.

A. R. BREWER, Sec'y. NORVIN GREEN, President.

Dated \_\_\_\_\_ 1881.

Received at 791 BROADWAY. Sept 13

To Batchelors

address in care of

Quaker & Bailey thirty Avenue

Delapena Paris France Edison

say very important Batchelors

should receive this duplicate.

Amel Insull

62nd

pg

THIS TELEGRAM HAS JUST BEEN RECEIVED AT THE OFFICE IN

791 BROADWAY, near Tenth Street,

WHERE ANY REPLY SHOULD BE SENT.

Direct Wires.

READ THE NOTICE AT THE TOP.

Paris Ex'd  
Gallen & Edison.

Paris, Sept. 7, 87.

Dr. J. N. Edison,

65. Fifth Avenue

New York, Etats-Unis d'Amérique.

My dear Sir:

As I wrote you before, the Congress has appropriated the sum so as to give the United States but 7 representatives out of 150. This small number must however consist of defence the best men we can get. The war/pulling has already begun, and you may be sure France will secure all she can. The arc light interest is so large that some arc light man will be put over the action of electric lighting. It is to be hoped however, we can get somebody who knows something of our circumstances to fill the sub-commission which ought to be made. I have spoken to our friend to whom you gave letters by telegraph in February, and he will make every personal effort to satisfy that position. You know at what a terrible expense he is here, and I am sure he will be able to do us great good if his mind were at ease. He must be perfectly independent, so telegraph me what should come, to contingency.

be put at his disposal. Do not underestimate the importance of this. I have spoken on the subject quietly but to the point, and this suggestion must be at once acted on.

Turritini is here. He says he has been approached about serving on the jury. He seems very willing to do anything to oblige us and I would like to see him on the committee on dynamo-machines. Is it true he has a treaty with you for Switzerland? By the by, what is the reason I have not received a line from you?

We made a new departure yesterday. There is a firm exhibiting French machinery run by Gramme machines of their own manufacture. The power, <sup>supplied</sup> by supplementary machines about 75 yards off. They asked us to experiment with lamps run by an independent machine which has been supplying their area light. So, considerably upon their lighting up the room of the American Commission, we tried the experiment, and to day we run 18 half lamps in multiple arc over a canopy, rather, cutters, planes etc, and 8 lamps in the

Commission office, and 6 in Dolbear's telephone rooms. The dynamo runs this easily at 900 to 1000 revolutions and (as I am told) by the parties) at 2 @ 2 1/2 HP. on the machine which runs so easily that they have asked to be allowed whole lamps on the circuit and they will double up the speed to 2000 revolutions. We will try the experiment to day. If successful they have agreed to run a line with 20 @ 30 lamps over to Berge's offices this afternoon.

If it be true that we are not to run the big machine over 700 @ 800 lights, this additional number will, <sup>be</sup> useful in the separate circuits for Berge's. The big conductors for the stair case are all laid and we are ready. At present the Grand escalier is pleasantly lighted by 6 Edison lights supplied by M. L. L. Puckler's friend.

Every day we have distinguished visitors. The Count of Paris, (Grandson of Louis Philippe) Gambetta, Jules Simon, Ferry, Cochery (two or three times) The Princess of Prussia, King Kabi'ka have called to examine things and have all been highly delighted. I'll tell a good story that very nearly



happened. The King of the Sandwich Islands  
was at the telephone with me and  
Batah was at the transmitter and. He <sup>was</sup>  
asked to sing and gave us Mary had a little lamb,  
which delighted his swarthy majesty very much.  
The thought of the narrow escape we had made,  
flashed upon me, and I blessed my luck. - For  
Batah had intended, as he told me afterwards, to  
give "There was an old nigger," which is  
the other half of his usual repertoire, but didn't.

The engineers of the Lyndicate are gathering  
all the points for testing your system. We  
have disseminated the exp. word system, until  
people talk of Swan & Lyndicate & Son, having  
no system. The concentration of your matters  
in two salons, which in lighting, display, in-  
vention, are utterly distinct from anything  
else, give you an immense preponderance  
over others who show innumerable appliances,  
Swan, for instance, light the Palace Congress  
the eating room, the British Telegraph building,  
the British Commission - For light two models  
of about 20 pendant light each, and a telephone  
room - likewise the boy - Oh where was he? -  
complacent servant who talk on the subject with  
out knowing much about it, say, "But, Edison, has  
a system." Hoping your other system has  
inspired by your trip to the country, from which will pass.

Paris,

7 Sept. 1857.

Dear Sir,

Enclosed herewith you will find an Article which appeared in the "Pomp" yesterday evening written by Mr. Vernier mentioned in a former letter. Tomorrow in the Journal des Débats Mr. Da Moncel essays all that he has stated against you & acknowledges himself entirely convinced - This Article will make a good deal of sensation as his hard criticisms of you in the past are known to everybody. We are now preparing from the extracts from the New York Journals & from the French & German Journals the material for a pamphlet to be fully illustrated with designs of your Exhibit at the Exposition.

This will be ready for distribution in 10 days from this time, & we shall order an Edition probably of not less than 5000 Copies to place on the Tables at the Exposition & keep a supply sufficient for every person that passes to take from. We are also getting up a small pamphlet of the same sized page as the official Catalogue giving a plan of your Salons, a descriptive account of all the objects exhibited, & extracts from the Paris Journals regarding them. A good many thousands of these will also be scattered about - The work of the printing of the Patents is nearly finished

1

It will be ready for the 15<sup>th</sup> of this month -  
Am not certain whether I have mentioned before  
having taken 10 pages additional in the official  
Catalogue - 6 of these pages will be taken up  
with Cuts & explanatory text & are in the body  
of the Catalogue - In the new Edition now  
preparing there is a plan of the whole Exposition  
which was not given in the first Edition - This  
will occupy 2 pages which will be opposite each  
other with two pages similar placed  
other - The two pages at the back of these which  
one has over that everybody must refer to, we have  
taken & have filled them up with extracts from  
Le Temps, la Republique française & the Journal  
des Debats, Articles & also a translation of the  
Articles in the Ann giving an account of all  
the operations of the American Edition Light  
Co. - One of the Editors of Le Temps is now  
retained & works in our office every afternoon  
in the preparation of Articles & in the revision  
of proofs - Four or five days ago we  
addressed a letter to the <sup>hon</sup> Syndicate advising  
them of what was being done in regard to the  
Press & proposing to submit for their approval  
everything that should be proposed to be done  
& that they should engage to bear one half  
of the expenses in case they take the  
affair - The Verbal reply was that several  
of the Members of the Syndicate objected

to taking any part in it, as it was making  
us too independent of them, & that when the  
10 thousand should arrive if they should  
happen to want a fortnight more for  
declaring the option they would not be  
likely to get it. I assured them that there  
was no grounds for any apprehension  
in regard to this if matters went on satisfactorily  
up to that time, & that there was no anticipation  
that they would accept at this moment the  
half of the expenses, & that the letter was  
written in order to take date & to advise  
them that in the event of their taking the  
affair we should expect them to bear their  
part of the expenses made.

Yours very truly  
J. M. Bailey

Have arranged at Conservatoire des  
Arts et metiers for a dynamometer  
Thomas A. Edison Esq for taking force of machines,  
Mr. Mangon (Kerol) desired me  
to express to you the desire of all the savants  
as well as of the public, that you come here during  
the Exposition and said you would have an  
extraordinary reception, so says everybody

(3.)

Paris Sept 8. 1881—  
My dear Edison,

Received your cable today saying "trial ship small outfit for lamps manufacture"— Don't fail to give me your views on this as on other matters as soon as you have anything definite yourself—  
I have entered in my book no less than six more firms in different parts of Europe who want the "light" and I tell them all that the policy of the company will be determined inside of a month when they will hear from us— Got hold of Prof. Wiedemann the Editor of "Poggendorff Annalen" and spent all morning showing him around, invited him to make tests with us next week & I suggested that as a delegate to the Congress he should require that Swan's, Marx's, etc should also be put under the same; he will do this as also I know Count Rumford will also and I believe I can rely on Barker— We are the only ones here to ask a test of any sort and I shall lend my instruments to any one else that wants to be tested—  
Now—<sup>Shall</sup> show which way the wind blows" as an instance the Fairbanks people

2

have been running Swan lights all over the exhibition and they asked Walker Sec. of Amn Commission whether they could try one of ours that had been put in Amn Commission office - They tried it and they said to him "why it only takes  $\frac{3}{4}$  of a Weber" as if it had taken a great deal more for Swans and they said to him "if that was the style of lamp Edison made he need not look for anything better."

Minces Royal of Prussia in last night and very much interested in light photo her also Phonograph, Micrograph, and singing telephone. Phil was delighted could have kept her any length of time but tremendous crowd.

The Automatic instrument being left in table got all broken up and all chain works had all their spools busted out (can fix) -

Yours "Patch"

1900  
page 8  
1900

8th Sept, 1881

My Dear Batchelor

I had to go to Michigan to get my wife five days before your big machine was ready for shipment and did not return until the machine was shipped. I told Francis to write you a full description as to the machine. I wrote we connect the field magnet, but it appears he wrote you a description of the whole machine. For fear that he might not have put everything in I will give you a description myself.

I must tell you that when you left the first experiment with the big machine brought out the fact that it was a problem of great difficulty to take off from 600 to 800 lights from a commutator with three large brushes on each side when the brushes were put on new and at a proper angle and the ends ground so that all of them would touch the commutator and when six hundred light were put, a few minutes after, the sparking acting bad and increased so that at the end of about half an hour we were always compelled to stop the machine. Sometimes the heat due to the sparking would be so great as to melt the solder and the brushes would come to pieces. The following phenomena occurred which explained why the sparking increased so: The sparks melted the ends of the copper and a film of copper got onto each end and connected to its neighbor so that at the expiration of half an hour the crust at each end was practically solid. It had no elasticity and the commutator would also get badly burnt. I say I was in a bad hole as it looked as if it were impossible to take off such a tremendous current. I then determined to try to investigate the subject thoroughly. I took one of the South American machines having only a spindle in the bearings and a complete commutator with brushes. On the spindle was a pulley which was run by an electric motor so that I could vary the speed. I found that with the commutator standing still with new brushes upon which I put very hard pressure and with the commutator highly polished that there was 1/1000 of an ohm resistance between the brushes and the commutator, or half of 1/1000 of an ohm per brush. Upon rotating the shaft at different speeds I found that the resistance increased in proportion to the speed whether I started with a light pressure or a heavy pressure, viz. that the resistance was greater when the brushes were on flat than when they were end on. This is of course easy to understand because when they were on flat but a small portion of the brush is in contact. That is to say the total area of brush contact is small, while when they are end on the total area of contact is many times greater. Besides when end on each wire gets current direct from the commutator, while of on flat the current is taken off through each layer of wires one with the other. But notwithstanding all experiments the resistance with the most terrible pressure was considerable. I think the lowest resistance we could get was 8/1000 of an ohm. Now 5/1000 of an ohm is not much resistance with a small dynamo with only sixty. That is to say it is a small factor of the total resistance but when you come to a big machine it becomes a very important factor. There seems

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To Charles Batchelor

8th of Sept., 1881

to be a physical phenomena between moving surfaces composed of the same metal and no amount of pressure or change of form will prevent it. It is fixed and definite and the I came to the conclusion that it would be impossible to take off such a tremendous current as we require for the big machine by means of copper brushes, as copper without the use of an impracticably large commutator. I then thought I would try the effect of moré current. I amalgamated the surface of the commutator and the brushes Prestoi! There came a change! The thing had no resistance noticeable whether moving or standing still. Upon the next occasion that the big machine was ready to start I amalgamated the commutators and brushes and when 600 lights were put on no sparking could be seen standing a few feet from the machine. Only by looking down between the commutator and the brushes could any sparks be detected and these sparks were blue, and were due to the effect of the machinery while the sparkes of copper would have been yellow and I then knew that the problem was solved. We ran the machine for about one hour and a half a few days afterwards we started on a six hours test with 649 lamps on. The commutators gave no trouble whatever up to the fourth hour, when the mercury got worn off in places and a spark was apparant, but even up to the end of the test the sparks were not great. I afterwards experimented and found that the following was the best way of renewing the mercury. I took the brushes and dipped them for about six seconds in a solution consisting of about fifty parts nitrate acid and about fifty parts of water, dipping about 2 $\frac{1}{2}$  inches of the brushes in the solution. I then put a lot of mercury in a flat dish (perhaps it would be better to use a deep dish) dipped the brushes in the mercury for about five seconds then dipped them again in the nitrate acid solution for another five seconds, then put them under a running stream of water at such an angle that all the acid would be washed out, working the ends of the brushes so that the mercury would freely flow all over them but being careful not to get them out of position. I then took hold of the brush with both hands, held it over the mercury dish, and gave it eight or ten sharp jerks like the cracking of a whip so as to dislodge the mercury. I then lay them on blotting paper for a few minutes to get rid of the water turning them over from time to time. You will notice that the mercury becomes very black and that the copper when first dipped and then taken out looks very dirty and black much gets over it. This is nothing but oxide of mercury and when steeped in the acid bath the second time is immediately clean. After the brushes are amalgamated several hours they get dull, dry, and the mercury becomes oxidized, therefore the brushes should be amalgamated only fifteen or twenty minutes before they are put into the machine and they should be reamalgamated each time you make a fresh run with the machine. We also amalgamate the commutator. Before I left we had not burned off the commutator which had a great many bad places in it due to its use before amalgamation. I told Dean to turn the commutator off before shipping machine to you. I amalgamate the commutators in the following manner. Dissolve mercury in nitrate acid until the acid will soak up no more mercury. Then get a stick and rap around it a linen rag so as to form a kind of sugar tit which should be quite hard. Keep this tit in the solution and then daub it several times on a second



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To Charles Batchelor

Sept. 8, 1881

rag so as to rid it of any surplus solution as it only requires to be moist. Start the engine slowly, get your commutator clean, then take the rag arranged in the form of a tit and hold it gently on one spot on the commutator during about ten or fifteen turns of the machine. The take it off and hold a perfectly clean rag on the same spot so as to polish it. The object of this is to get the acid off as quickly as possible as the solution is a acid solution and it is essential that no acid should get down to the mica between the bars; therefore it requires that great care should be taken that the tit should only have a minimum dampness. By performing successive operations as above you will soon get the commutator fully amalgamated and very shiny. Then you better have a superficial amalgamation the brushes may be put on and the machine is ready to start. The brushes should be so set that on one side the ends of the brushes are exactly in the centre of the insulation between the blocks and the brushes on the other side should be exactly in the centre of the block so that there will be the same number of blocks on the one side as on the other from the neutral point which you can ascertain by following up the blocks, then the wire up to the bar over the space between the field magnets. Great care should be taken in setting these brushes so that they shall be truly end on. If is quite difficult to get them so, as sometimes the lower part of the brush will bear while the upper wires although they may look as as if they touch while they really do not so that one side of the brush will be right and other not; that is to say not at right angles to the commutator. Care should therefore be taken before starting the machine to get all the ends as far as possible to bear truly on the commutator block.

I do not know whether Dean sent you the brushes that I used. I found all brushes are liable to spread out at the edges that is to say that some of the wires at the edge would get spread out. I therefore took a copper wire and wound it around the brush about an inch or an inch and a half, if I remember right, from the edge of the holder so as to keep them together and to prevent this load of wire from gradually working down towards the commutator where it might cause trouble, I connected it to another wire the end of which I fastened round the screw which holds the brush in the holder.

I will now explain to you how to keep up the supply of mercury on the commutator. This is important and requires a little judgement. (After running a few moments the commutator will look a little dull, therefore to prevent this a clean dry rag should be held on the commutator and worked back and forth so as to keep it polished.)

To replenish mercury on the commutator take a couple of thicknesses of extremely fine woven cloth, then pour in some mercury about the size of a pea right in the centre of the cloth. Gather the cloth up like a sugar tit by twisting it. Then while the machine is running and the lamps are on you can as occasion may require, hold this sugar tit so the speak, with the globule of mercury in it on the commutator and by pressing gently the mercury will "spray out" through the cloth onto the commutator. You can see by the shine on the commutator the proper degree of pressure necessary. While holding it on the dry cloth should be held in advance of the tit and worked backwards and forwards so as to spread the mercury. In this way you can reamalgamate the whole surface of the commutator very nicely.

To Charles Batchelor

Sept. 6, 1881

About every five or six minutes the dry cloth should be held on the commutator so as to polish it and about every twenty or thirty minutes a slight amount of fresh mercury should be put on the commutator. You will notice when you are running with lights on a little line of sparks on different parts of the commutator especially after putting fresh mercury on. When those are seen the dry cloth should be held on and it will remove them. It is nothing more than a little film of mercury on the surface of the wires between the bars. Some times when you are putting on mercury by means of the tit you may press too hard and too much mercury get out. In this case little snappy arcs will form. Although this does no harm it is best to put it on very gently. The great thing is to keep plenty of mercury on the commutator and keep it very bright. You will find after putting on metallic mercury that a great deal of it is sprayed over on the brush holders by centrifugal forces occasioned by the movement of the armature but this does not matter. After you are through with the nights run the commutator should be wiped very dry and although I have not tried it my impression is that the brushes should be taken out and the ends put in water as if the commutator is allowed to stand for a length of time with any considerable amount of mercury on it it gets very bad as the mercury oxidizes to a white solid. I found that when I had eight hundred lights on with two brushes on each side they would carry it with great facility therefore it is possible to lift a brush off if you ever have occasion to do so to fix anything without any danger and it would be even possible (you could) accurately mark the brushes as to their position on the brush holder, their angle and other things to reamalgamate a break or take it out and fix it and put it back while the machine is running, but of course this could not be done without some mark. I should advise you to try this while the machine is standing still to see if the thing can be done with safety.

The bars are wound with four thicknesses of parchment paper each layer being fapanned. We found on testing that a half inch spark from the big Ritchie with a condenser on it would not penetrate this insulation, but not with standing this insulation and 1/12 inch air space between each bar a spark occurred between two bars when we have 840 lights on nay or should not get it to spark when we had 753 lights on, so you see this tendency to spark is a very extraordinary one and I am sure it is just a new (shenanagin) and therefore you should keep it to yourself. It depends entirely on the amount of current passing.

Now I advise that you do not run regularly with more than 500 or 600 lights and as you say a great many half lights can be used this will be quite sufficient. For instance you may use 250 full lights and 700 half lights. This will be equal to 600 full lights. Then you will be perfectly safe. When you make the economical test put on 700 full lights. The machine for this test will be perfectly safe with such a number. But you must look out that there are no crosses in your chandeliers or conductors as a cross would be equal to 200 or 300 extra lights and this added to the 600 you ordinarily burn would surely bring out the above referred to phenomena. This sparking which occurs between the bars does no harm so long as the arc does not stick. Every time that it has occurred so far the arc

To Charles Batchelor

Sept. 8, 1881

which was formed has been broken by the attraction of the lines of force at the neutral point and only a few scintillations have been thrown out at the ends of the machine but once the arc was not destroyed by the attraction of the lines of force it got large and a low resistance short circuit of the machine occurred and yanked the bars round in a lovely manner and bent them  $\frac{1}{4}$  of an inch out of the true. These arcs which occurred when we had 850 lights on were immediately destroyed in the manner set forth and we continued to run even after we had seen these arcs, for half an hour without that occurring again the probably was covered up by the Japan running into the arcs are of such a nature that one would think that they are due to the wire bands from the armature striking the field magnets. We soon found that this was not so. What led to the discovery of the importance of this phenomena was this. I had concluded that the spotting was due to conduction across the mica between the bats which was the way you remember we first conducted them. Then I concluded that air being the

of the bar from which copper was taken and deposited on the other bar the copper being taken over an air space fully  $\frac{1}{84}$  of an inch. I then knew I had to deal with a static current. I then went to work and had the bars Japaned finding by investigating with a coil that Japan retards static sparks. We assembled the machine the bars being heavily Japaned but the every time we had three barrels or 600 lights on and I found this was due to the fact that the Japan was put on unequally. We then took the bars out made them smaller and would them as I have stated with four thickness of parchment paper. I found that parchment paper is the only kind of paper that offers great resistance to the static spark. You know that all papers are nothing more than a combination of fibers, that the spark goes right through the air spaces between the fibres and the paper offers no resistance at all, in fact it travels through the air, but if the air space is filled up with any glutinous substance so that it must pass through matter then it offers high resistance. Now in parchment paper the fibres are all agglutinous the air spaces are (clogged?), hence the spark must pass through solid matter hence the great utility of parchment paper for this purpose. These four layers as the insulation you have on the machine and you are quite safe for 600 lights providing you have no arcs in the chandeliers. Perhaps you can get along with even four or five hundred full lights. It would be better to get along with a smaller number until the test for economy takes place. Then you can put on 700 lights. You will notice that we have bored the field out over  $\frac{1}{8}$  of an inch so there is not the slightest danger about the hand touching. We were compelled to bore out the field so that we could get sufficient air through the to cool the machine. With the present velocity of the

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To Charles Batchelor

Sept. 8, 1881

blowers the machine will not over heat itself with 750 lights on. We were compelled to pass the air through one end so that it will go out at the other end as we did not dare to arrange it otherwise. Hence the end of the armature where the air goes in after running many hours would be perfectly cold while the end nearest the commutator would be found pretty hot especially the tits. But there is no danger even if the tits get so hot that you cannot scarcely hold your hand over. Of course the end nearest the commutator is at the disadvantage of having hot air thrown against it to cool it.

You will have to be very careful about that "cross belt". It was the and you will have to inspect it well. I do not know whether you will need to run this machine every night or only certain nights in the week. If every night then after closing and the lights are off I should run the machine about half speed with the current altogether off so as to reduce the temperature of the armature. Otherwise it will not be very cool when you start the next night. However do not suppose this matters very much as the speed of the blower is such that the heat never can rise to a dangerous point, without more than 700 lights are put on. I do not know whether Dean written regarding what kind of oil he uses, but my impression is the the best land oil is the thing to use. I think I have heard him say so. I should only run two or three hundred lights at first until you have got your bearings nicely soaking. You will notice that the has been changed. It pounded so that Dean put on a regular connecting rod. I want to tell you that just before we were ready to ship this machine the shaft broke off at a point where the disc on the engine connects with it. It appears Armington & Sims made this shaft of green metal. It was a very lucky accident as you might have had it occur in Paris. The idea of using a green metal shaft on a high speed engine with such a terrible thrust seems to me. In twenty five hours with a big gang of men Dean had a new steel shaft in with the machine running. The dynamo then worked so nicely and satisfactorily that I told Dean that I would not be satisfied if he did not get all the thump out of the engine and I told him to overhaul the engine thoroughly. In this investigation he found that the disc on the engine with which the rod is connected was cracked. He then had to turn off the wheel and shriek an iron band on. After this was done the engine started and actually the iron band broke it being made of poor iron. He then made another band of the best moor iron and that is what you have on it now. You will notice that we have lagged the governor pulley so as to get the the proper speed to the blower.

Now about the electro motive force. There has been some very bad miscalculations in connection with this machine all the way through. I had the cheek (1) to connect up the field magnets so as to put more foot pounds on it and the result was that with even some exterior resistance, two ohms I think, and with a speed of only 320 revolutions we got about 100 or 110 volts which is more than we needed. Your lamps are 103 volts, the loss in your conductors will probably be not more than four volts hence 107 volts is all you require. About 3 horse power is used on the field

To Charles Batchelor

Sept. 8, 1881

magnets; the way it was connected when you were here it had but 1/8 of a horse power.

Be careful that no water or oil gets round the blower as it might work into it and throw on to the armature.

The English machine which will be shipped on the 17th of this month has 19 Z bars instead of 146 as in your machine and it has one field magnet longer. It is to be insulated with twelve layers of japanned parchment paper and the air will be injected in the centre a separation being made between the field magnet; it will give 1000 lights.

I forgot to say that the lamps you have are 140 ohms instead of 125 ohms resistance. This was Dr. Nichol's mistake. After making about 30,000 of these lamps every body supposing them to be 125 ohms I got to figuring one night and found that if a lamp requires 103 volts with an economy of ten per horse power it would have to have more resistance than 125 ohms or else there must be too many foot pounds on it for a ten per horse power economy. I spoke to Upton about it and upon investigation he traced it to Dr. Nichols. The Dr. has left us and is now fitting a Professor's chair in some provincial college, teaching the young idea how to shoot.

Tell to look out for water in his cylinder and always open the drain cocks and get dry steam and heat the cylinder up very slowly when first starting; otherwise he will get in trouble like we did here.

Upon receipt of Bailey's telegram about making lamps in France I had Hughes ship you his Barton(?) engine and archimediard pump burner and blower which he had rigged up for fruit experiments. These I believe have gone forward and I have also instructed Upton to send you fifty thousand fibres. He could spare you some cutting moulds but I dare not send them as both the drawings machine and cutting moulds are patented in France. However with the aid of what we have sent you, you can make a very nice little start and I should get a room somewhere in the suburbs 25 ft by 30 ft or 40 ft which will be quite sufficient for the time being and start the thing as economically as possible. I suppose you ought to be able to get such a room as you require for \$15, or \$20, a month.

You will have to go to some glass blowing place and get your globes pot blowers and your tubes drawn from the same pot. Your platina you will of course get at Johnson, Mathey and Co. of Hatten Gardens, London. You should claim to get it at the same rate at which they supply it to the Lamp Co. (we have special rates with them) stating that you require it for the Lamp Co.'s use in France.

If you have trouble about getting nickel we can send you sheet n nickel from here. We use plumbago covers in carbonizing that is to say the large cover which goes over the nickel forms is made of plumbago.

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To Charles Batchelor

Sept. 8, 1881

Upton finds that about 2% of his lamps after being put away for two or three months loose their vacuum and finds it due to the fact that the sealing is not long enough. He has therefore added 1/8 of an inch to the length of this platinum so that he squeezes 1/8 of an inch more glass on it and he also brings the glass in the inside part up to a more "pastey" condition that is to say he gets it very much hotter or better fused before he squeezes it onto the wires

You will probably have a very healthy time in getting cutting mould made in France. I should only get a half lamp cutting mould made at first.

I will write you further if I should have omitted anything.

Please continue to keep me well posted.

Yours very sincerely

Thomas A. Edison

Written by S. Insul.

Exposition Internationale d'Electricité

PALAIS DE L'INDUSTRIE  
Salles 24 & 25  
DIRECTEURS  
M. M. CHARLES BATCHELOR  
OTTO A. MOSES

Dr. Eleventh patent delayed by a  
interference on <sup>LUMIERE ELECTRIQUE EDISON</sup>  
black matter, patent some be issued -  
1887.

Représentants de M<sup>r</sup> EDISON.

M<sup>r</sup> M. Puskas & Buitoy

33, Avenue de l'Opéra. 33

Dear Sir,

Will you please cable as soon as you  
get this an explanation in regard to the  
following point. Amongst your applications  
for Patents not yet delivered in the States  
is one filed December 11<sup>th</sup> 1879. A  
Patent is issued in England for the  
points covered by this application -  
Hemsgard raises the question why has  
not the Patent been delivered in the  
States? He does not attach a very great  
importance to this, but he thinks it may  
be made something of by the Board  
on the other side. Batchelor explained  
it by referring to other American Patents  
which he says in effect cover the points  
of the application filed December 11-1879

T

The word - "interference".

*Har W.P.*

Thomas A. Edison

OLLO V'WOGES  
M'N'CHVBER? BULCHEIOB  
BULCHER?  
27110 5432  
LWGVIS DE EINDOPHIE

LOWE'S ELECTRONIC EDISON

Exposition Internationale d'Electricite





making search for publications relating to Swan. Also that the existence of such publications was alleged with such distinctness & apparent certainty by various persons here, among others by Buchanan & Armstrong and himself, as it did not seem prudent to engage in the fight with Swan before being finally assured in regard to his claims. Brewer & Jansen have reported positively to time & have sent no such publications as they have been able to find - nothing in these however of an earlier date than November 1880. They have now sent a man to Newcastle who will have facilities for getting at the records of the Newcastle Literary & Philanthropic Society in which it is alleged will be found something relating to the Swan's paper. This last however will have no bearing whatever on the questions involved in the Patents. The dates of the French and English Patents were sent to you a few days ago. In addition to what has been done by Brewer & Jansen I wrote sometime ago to Mr. Green asking him what was the earliest publication of the Swan Electric Light to which his reply dated 5 September 1881 says

the earliest ~~application~~ publication of the Swan  
electric light was a pamphlet entitled "Electric  
light" a lecture delivered by Mr Swan before  
the members of the Literary & Philanthropic Society  
of Newcastle, the President, Sir W. G. Armstrong  
in the Chair October 20- 1880. As the result  
of the examination of the Patents & of these  
inquiries in regard to Mr Swan's claims we have  
decided today to make an immediate application  
to the Tribunal for an order of sequestration on  
Swan, taking just the same line of procedure  
as in the case of Maxim - This will be  
ready for service probably on Monday next.  
I shall cable you this tonight in order that if  
for any reason you desire to delay action you  
may have an opportunity of doing so. In  
the absence of any instructions to the contrary  
shall consider your previous communications  
as warranting the action now proposed -

Respectfully & truly Yours

Duskas & Baile  
per W.P.

Thomas A. Edison, Esq

(3.)

42

Mons.  
14 Rue de Valenciennes  
Paris, Sept. 10. 1881

Dr. J. A. Edison  
65 Fifth Avenue  
New York, U.S.A.

My dear Sir:

Yesterday I met Mr. Couderc,  
the Attorney of the U.S. Co., and in a conver-  
sation which he commenced on the sub-  
ject of the injunction, he said with much  
apparent feeling: "We had tried all we  
could to prevent the violent measures  
proposed by his principals in retaliation,  
because it would give him to see so  
great an American invention thrown  
into the public domain." I told him  
"the fight was of his own beginning, be-  
cause we would not have disturbed  
the harmony of the Exposition had not  
his Company openly attacked us on  
neutral ground." In a joking way I  
added: "The past immunity of all"

infringers was due to your desire, like a good general, not to stop an attack all along the line of an enemy, because a few wasps flew at you on the road.

While not allowing him to think I attached any importance to his words, I admit they have given me some concern after having turned them over in my mind.

In conversations with Armingaud and Delatoff on the subject of our claims, they have repeatedly declared it of the greatest importance that the first patents issued to you here should hold, as Brander (they thought, through economy) had put in the your other patents, in many cases, in the form of 'additions'; for it holds in French law that if a patent fails to which additions are attached, the additions fail too. It also transpired in conversation, that previous publication of an invention in a foreign country vitiates the subsequent French patent; i.e., if a patent

is applied for in France after it has been granted elsewhere, and it can be proven a description of the invention in the journals of the country where granted, or elsewhere, has reached France by mail or telegraph before the filing of the application here, the patent fails; and its additions with it.

Now, I would suggest perhaps a certain correspondent (whom you know to be as cunning as a fox), might have betrayed you, as you once mentioned, and telegraphed here, as well as to England, a sufficient description of your lamp to warrant the observations of Mr. Condert.

I will not comment further than to remark the only way to surmount such a difficulty (if it exist) is to have a full treasury and many and powerful friends here, interested deeply in the success of your patents, before coming to an issue with the infringers;

and such has always been my opinion.

Faithfully Yours,

Otto Lilloses

Blank No. 1.

# THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions, limiting its liability, which have been approved by the Senate of the United States.  
Errors can be corrected only by the sender or the receiving station for completion, and the Company will not hold itself liable for any delay in transmission or delivery of messages.  
This message is an UNREPEATED MESSAGE and is delivered by request of the sender under its conditions here shown.

A. R. BREWER, Secy. *701* NORVIN GREEN, President.

Dated North Adams Mass Sept 12 1881.

Received at 791 BROADWAY

To Thos A Edison

65 save

READ THE NOTICE AT THE TOP.

Please telegraph when  
Paris Exposition closes  
what are probabilities  
of continuance  
R J Sprague  
H A W

THIS TELEGRAM HAS JUST BEEN RECEIVED AT THE OFFICE IN

791 BROADWAY, near Tenth Street,

WHERE ANY REPLY SHOULD BE SENT.

Direct Wire

Dr J. A. Edison,  
65 Fifth Avenue

14 Rue de Valenciennes  
Paris, Sept. 13. 87

New York, - Etats Unis d'Amérique

My dear Sir:

Prof. Barker returned last night from the Work Meeting of the British Association. Prof. Rowland also came with him. Prof. R gave me an account of a lecture by Sir William Thomson on which, <sup>inadvertently</sup> I coincided with <sup>him</sup> <sup>himself</sup>. It appears Sir W. T. was to have read a paper on the "Dance battery"; but instead of carrying out the programme, he indulged in remarks on dynamo machines in general, railing at the want of knowledge displayed by inventors who persist in as-  
suming the internal resistance of arma-  
tures to the external resistance of the circuit, carrying it as they do to equality in some cases instead of making the relations of resistances at least one to two under work done. He did not mention a word about you, Prof. Rowland (in reply to Prof. Dyer) <sup>in the assembly</sup>, and declared that there was one inventor at least who had the same



views in theory as Sir William, and who had done still more, had put them into practice; that the machine embodying them had been in successful operation for near two years at Moul Park, and a specimen was doing work at the Paris Exhibition to-day.

Prof. Barker said he would have taken up the subject but preferred to reserve his force for the congressional battle. In the afternoon I met Mr. Press and asked of him an account of Sir W. V. remarks in which he mentioned what I have given above. He said Sir William had done you full justice, and cited some words he had used which were so much at variance with what I had heard in the morning that I was astonished. Last night I met Profs. Barker and Rowland together and asked of them both what had occurred and they substantiated the first account. Such is human testimony I give it as I receive it.

This morning Prof. Jamieson came with a crowd of scientific friends and for two hours he examined and tested the different

machines. I showed him particularly the evidences in the telephone infringement case. He (like all others to whom I show 'Cavendish's Files Jan 14. 1876') was perfectly convinced that you were the discover of the telephone, the inventor of the microphone and sole worker in the motorgraphs.

In a few days we are going to organize morning seances to which special invitations will be issued to distinguished persons, in scientific, public, and newspaper life. At these meetings your discoveries and inventions will be treated in a lecture by me and illustration by Balat. I think it will take immensely.

Last night an accident happened to the old rattletrap of an engine we hired. The fire flew out of the governor's belly and for a half hour we were in darkness with 500 people at the time in the salons. We were going again with before the clearing of the doors. I trust the big dynamo will arrive all right, because many people

engine about it every day. From what I  
read I think we better make our economy  
test on the smaller one. This, after running  
three hours, heats a great deal. Holston  
tells me <sup>yet</sup> ~~that~~ was not the case at Illinois.  
so I don't know where to look for the  
cause. The armature runs so close to  
the field magnet that I always am in fear  
of an accident from the bowing of the ap-  
per bars outward to wards their middle.  
Now, as heating and expansion at this point  
seems unavoidable, would it not be well to  
sink a slight groove where the brass work-  
ing wire runs opposite to the field magnet,  
so that it may not be cut by chance? Or,  
might not the whole bore of the field magnet be  
slightly elliptical so as to provide for the cur-  
ving of the bars outward?

Faithfully, yours,

Otto Adlweiss

Paris. Sept 15<sup>th</sup> 1881

My dear Inez,  
Put the following  
names in the code book:-

Abrogate:- Prof. Rowland.  
Abright:- Governor P. Lowrey.  
Abruptness:- J. Jamin.  
Abscond:- J. W. Swan  
Absent:- George Hor Lane

Thanks for your many letters  
just as soon as I can get  
a minute to my self I shall  
give you a long letter

Yours truly

Wm. Batchelor

P.S. Have received no notice from  
you yet of the deposit to my  
credit at Dr. Wet Morgan & Co  
of the installment (10 of Aug)  
The B.C. & C.L. have money  
from Fabric - C.B.

## Exposition Internationale d'Electricité

PALAIS DE L'INDUSTRIE  
Salles 24 & 25  
DIRECTEURS  
M.M. CHARLES BATCHELOR  
OTTO A. MOSES

LUMIÈRE ÉLECTRIQUE EDISON

Paris, le 16<sup>th</sup> September 1881.

Représentants de M<sup>r</sup> EDISON

*Mr. M. Pustius & Bailey*

33, Avenue de l'Opéra, 33

My dear Sir,

Have many matters of interest to write you, but my use of a short-hand writer is limited and time more so. Will only say that some days ago sent note to <sup>Gambier</sup> Janin, who stands in France higher than Du Moncel inviting him to come and see your exhibit. He accepted and Patch and Moses made a fine showing of it. I called on him next day and asked him to lecture on your exhibit before the congress. He said that it would be against his rules to go outside of the世博会, that it was not his audience elsewhere; that at the世博会 next November he would give one or more lectures on you and your works specially, and desired me to convey to you his expression of appreciation of your work in the most flattering terms. He added that he had been asked to write an article for the *Revue des Deux Mondes* on the Exposition and that he should give you the place of honor in it, in addition to this he promised to get the lecture at世博会 who he said was the most

1.

Mr. Baileys  
brilliant and successful before the audiences of the Salonne, to  
lecture at Congress and am waiting today for presentation to him,  
shall try to have him give one or two lectures outside the  
Congress.

M. Garnier the architect of Opera called the other day  
at our office and left his card asking to call, Patch went  
over with me and we fixed an appointment in half an hour as  
to the Grand Opera, This is the biggest card in Europe, The  
Jardin d'Acclimatation, 3000 lamps, and  
today went over the exhibit at Palais with Patch and  
Moore. Have got a series of articles for German journals  
eight or ten in number. Will send list another day. They  
are written by Bushonnet and by Mezeret of Temps.

Yours very truly  
Purkiss & Bailey.

Thomas A. Edison Esq.

65 Fifth Avenue

New York.

Paula's Expiration

7<sup>th</sup> Sept 1887

Mrs Leibel

Lancaster Ohio  
Sept 17<sup>th</sup> 87  
Wm. W. Garrison  
Sir

Why is it  
that I as yet have not  
received my money. I am sure  
has not my husband inform-  
ed you to send to my  
address 230 R. Mount as I support  
it is now three months and  
as yet have not received any  
money. Please Explain.  
at once Yours Philip Leibel  
Canton  
Ohio

Paris Sept 17 1891  
My dear Susan

Put these in code:-

Dave:- Send ☐ A lamps  
with plain sockets

Daggle:- Send ☐ A lamps with  
stopcock socket-

Daf:- Send ☐ B lamps with  
~~stopcock plain~~ sockets

Deafness send ☐ B lamps  
with plain sockets.

And oblige yours  
"Batchelor-"

Things are lively here how goes it  
with you? —

Paris, Sept 10. 1880.

My dear Sir,

You will be glad to hear. I am  
 sure perfectly right in thinking Bailey suited for his work  
 here. Bailey is a most indefatigable worker - I have  
 tried all this week to bring Bailey and Fabri to  
 work together and I think we may succeed. I told  
 Mr Fabri that if Mr Bailey had the backing of a  
 house like Drexel Hayes & Co it would be difficult  
 indeed to find a man better suited to the work.

This expedition is a very expensive business and  
 with all the care I can bring to bear on lessening its  
 expenses it is still very great. I have again  
 drawn on Mr Lere for money, this time for (Twenty)  
 twenty thousand francs. My disbursements have  
 been as follows:-

Previous disbursements to Aug 19<sup>th</sup> Fr. 15,334.<sup>00</sup> 44  
 Aug 19 - Sept 12<sup>th</sup> =

|                    |                       |
|--------------------|-----------------------|
| Laundry expenses   | Fr. 14. <sup>58</sup> |
| Freight &c.        | 28. <sup>45</sup>     |
| Hiring &c          | 321. <sup>50</sup>    |
| Eng and Boiler &c  | 246. <sup>25</sup>    |
| Small power &c     | 3991. <sup>52</sup>   |
| Labor &c           | 262. <sup>60</sup>    |
| Mini Board &c      | 597. <sup>73</sup>    |
| Room Decoration &c | 3150. <sup>10</sup>   |



Setting Instrument of 256.87  
 Carpenter work of 2278.64  
 Catalogue expenses of 3600.00 15,444.92  
 Total disbursement To. 301449.38

I have drawn on Aug 19<sup>th</sup> 1880 To. 17,730.50  
 I have drawn on Sept 15<sup>th</sup> 1880 20,000.00  
To. 37,730.50

I am just as economical as possible but Paris  
 I believe to be now the dearest place for anything  
 in the world, and everything about the exhibition  
 costs three times what it is worth. I will give you an  
 example:— My carpenter brought me a bill for  
 Fr. 3544 — I objected to it as it was too much, he  
 would not take off a cent, so I told him I should  
 have it revised by the architect of the Palace; this  
 business brought the bill down to Fr. 2277 which I  
 wrote the same amount after a great deal of trouble.

The intention was between Mailey and myself  
 to put the explanation on Sloan a few days ago but  
 his men and his lawyers appearing on the scene and  
 having not wanting to have it done till he could in-  
 vestigate prevented us doing it — I think myself  
 it is better as in such matters although we have  
 a clear case it is well to have it looked into by  
 such men

Yours  
 Patcheson —

CHAS. BATCHELOR

55, Rue de la Gaieté

33 Ave de l'Opera

CABLE ADDRESS

Batchelor, PARIS.

Paris, le 20<sup>e</sup> Septembre 1881

My dear Insue, Please enter in Order.

Consistent :- Send a 110 Volt machine, regulator  
and 60 full ~~light~~ lamps ~~to~~ with  
turn off sockets to: \_\_\_\_\_

Consonant :- Send a 110 Volt machine, regulator,  
and 60 full lamps with plain  
sockets to: \_\_\_\_\_

Constantly :- Send a 110 Volt machine, regulator  
and 60 full lamps with 30 plain  
and 30 turn off sockets to: \_\_\_\_\_

Consoling. Send a 110 Volt machine, regulator  
and: \_\_\_\_\_

Adhesive :- Heilmann - Freyhaum and Steinlen  
Constructeurs - Mécaniciens  
à Mulhouse  
(Alsace)

Yours truly  
Chas Batchelor

14 Rue de Valenciennes  
Paris, Sept 22, 1887

Mr. J. A. Edison  
65, Fifth Avenue  
New York. U.S.A.

My dear Sir,

I left here night before last  
for Havre to discharge and reload the  
'Reg Dynamo' shipment via "Comade",  
taking Emma with me. Reached the  
vessel at 9 A.M. yesterday and none of the  
heavy weights were out as being covered  
by grain in bags. At 3 o'clock, <sup>at</sup> started  
unloading and at 9 P.M. had every one of  
the 24 packages <sup>bag</sup> aboard the cars which  
were one mile away from the steamer side.  
Everything was apparently in good condition;  
whereas packed them <sup>threw</sup> the business.  
The train was sent off at 9 P.M. precisely,  
to reach here at 8 A.M. to day precisely. So  
I may say that in 12 hours the big  
dynamo was discharged, transhipped one  
mile, loaded on cars, and shipped 140 miles  
by freight train. How, that for high <sup>3</sup> ~~500~~ miles?  
Sincerely Yours, ~~Edison~~

Paris Exp  
14. Rue de Valenciennes  
Paris, Sept. 22. 81

Dr. J. St. Edison  
65... Fifth Avenue  
New York, U.S.A.

My dear Sir:

Yesterday by appointment,  
I met all the representatives of electric  
light interests at the private office of  
M. Camier, the director of the Grand  
Opera to hear what distribution had  
been made to the different Companies  
of portions of the building.

Brush Anglo-American Co. got the  
grand staircase with permission to  
light on lanterns. Mr. Campbell (their  
manager) said they would bring their  
wires through the sewers from the Ex-  
position building.

Edison got the central grand staircase  
in the main building. He wanted to

put in but 400 lights but Mr. Garner  
said they must have 650, but the Swan  
representative said he would not furnish  
more than 600. It seems to be one of  
their dodges not to fill the chandeliers  
with all the globes leaving the top row  
always unlit so as not to show the break-  
ages lower down inconspicuously. Swan  
will want 60 horse power in the building.  
He will have a space in the basement.  
Edison gets the Grandoyer with  
10 chandeliers with 40 light each.  
We asked for 800 half lights and 40 h.p.  
The director appropriated the lamp  
toilet to our Fryer to light the grand  
paintings by Baudry which cover the  
vaulted and recessed ceiling. This is  
near 100 feet high and our lamps  
are only 15 to 25 feet from the ground.  
So maybe we have no cause of com-  
plaint although we protested against

lighting with anybody.

Jadbrookhoff & Werdersmann who are  
both in one Company "La Societe Gen-  
rale," got outside the Opera which J.  
has already, and the Legation.

Siemens was not represented at all,  
although he has 75 great lamps in  
the Exposition building.

Now, as the biggest price of adver-  
tising possible, as the most econom-  
ical, as the most brilliant course,  
would it not be best for us to try to  
put in 450 whole lights with the big  
machine direct from the Exposition?  
It is true all the light would be heaped  
up at the farthest end, 3/4 of a mile  
away, but the cost of the conductors  
should not be considered, because we can  
take up the strands, and we can have  
hereafter. This would be the grandest  
answer in the world to any inquiry as

to whether we could run a system.

While in Hawn, Charlie Eunie showed  
me a long letter you wrote, giving in-  
struction about the running of the  
Big Dynamo. I don't think 450  
lights then would run to our advantage  
at that great distance. We will always  
know beforehand what it will be able  
to do on the Grand Escalier, where  
we will put 250 whole light and  
about  $\frac{200}{2}$  lights with as much  
thrown in in resistance as to dem-  
onstrate capacity and ~~capacity~~ <sup>capacity</sup> ~~of~~ <sup>of</sup> ~~run-~~  
ning.

Engineering last week wrote a circular  
once at our exhibit. I told my des.  
Sturge the proprietor, and des. Cook,  
Editor, & Correspondent came in to our place,  
and after being shown everything, they said  
they would not only account us entirely what  
they had said but would give you in full a  
description as required here. <sup>Philadelphia Pa</sup>  
<sup>Oct. 1890.</sup>

Department of State,  
Washington, Sept. 24. 1886.

Thomas A. Edison, Esq.  
65 Fifth Avenue, N. Y. City.  
Sir,

Although the Department is  
closed, to day, for official business, I  
have, however, in accordance with your  
telegraphic request of this day's date,  
forwarded to you ~~about~~ fifty ad-  
ditional labels of the United States  
series.

Referring to my letter to you  
of July 16<sup>th</sup> last, advising you that the  
stock of French labels had become almost  
exhausted

exhausted and as no new supply has  
been received here, you cannot, therefore,  
be furnished with them. If, however,  
you will advise the Department of  
the French point of entry, of your  
goods, instructions will, if necessary,  
be sent early next week, to Mr. Walker  
to obtain, if possible, the proper trans-  
it of all your packages upon  
which only American labels have been  
placed.

Yours, Sir,

Your obedient servant,  
F. D. Delaunay  
Acting Chief Clerk



CHAS. BATCHELOR

52, Rue de la Bruyère

CABLE ADDRESS

Batchelor. PARIS.

Paris, le Sept 25<sup>e</sup> 1881

My dear Edison,

You cables all to hand and  
and although ditatory in answering occasionally it is not  
because I forget them — Bailey and I are attending to  
the Siemens matter — Had Eli Thompson, Dr. Hopt-  
Kinson and Dr. Adams yesterday — very much interested  
— Bailey got pretty well to bottom of Swan matter and  
knows and Betts are now working it up still further.  
— See Electrician Sept 17 — Squague came here and  
I find he has sold his patent in America to  
U.S. Lighting Co for \$500 he says he had beam  
meter in use 10 years ago for measuring deposit  
in large plating baths — he had an idea that  
he was selling his meter to Edison when he let  
them have it. What shall we do with him?  
I have not got that cleared with previous  
mention yet — See Electrician  
Sept 21. Howland's article do you recognize  
the experiment? — Engineering Group  
to give us good article with about 30 cuts  
in elegant style hand work to convince  
these fellows but after they were convinced  
they entirely take to himself —

— Batchelor —

Barton Ohio 29. Sept  
1891

Dear Sir

I have received your note.  
And I am very much oblige.  
To you for sending it.

Your truly

Simon Seibel

CHAS. BATCHELOR

52, Rue de la Bruyère

CABLE ADDRESS

Batchelor, PARIS.

Paris, le 1<sup>er</sup> Octobre 1881

My dear Edison—

Barker is working very hard for us. The main jury have delegated to men to make all the experiments and Barker has worked it so that there is not a single Englishman on the experimental jury on incandescent lamps. Thinking this would not stand he has proposed Crookes who is very much opposed to Swan but who is favorable to Maxim however we are not sure he will serve. Barker is the only man who has done anything on testing incandescent lamps as will on doubt have it all his own way. He proposes to use my apparatus which I think will be accepted.

I have carefully sounded Barker and he evidently depends on something you have said to him before. anyhow he is working hard for us and ought to be taken care of as the others would gladly get him if they could.

The Doctor I am sorry to say is a perfect failure. I have had my hands full ever since I came here dispelling ideas he has put in Baileys, Fabris and Lowey's head at different times regarding the worthlessness of our patents and I think there can be no greater damper to a big thing like this than to have a man like him around — a man who is always hunting up any weak points in our system and laying them before the very men whose confidence we want most. I have had a number of rows with him about

2.

it but he evidently thinks he is doing good for the company. I will cite one instance of his injudiciousness— Some time ago, and after we had put the injunction on Maxim he got it into his head (from something Maxim's lawyer said to him; who he frequently goes to see) that we had better not press the Maxim case, as there was a probability that Maxim would give the whole thing to the world if pressed, ~~so~~ because of the Fox article being published in Europe— I showed him our patent for spiral lamp of carbon which was at least 1 month before Fox letter could have been written and thought I had convinced him— For all that he rushed off to Fabri and Lowry and raised their fears on it so that they came to me to see if there is anything in it— Now Fabri is that kind of a man that if you put such an idea into his head it is difficult to get it out again— He doctor has kept me busy with such things as these ever since I have been here. If he would only turn his attention to getting articles in the papers he could put in 4 or 5 every day, but that he won't do and when I promise articles in French he says he will give them but never does— Altogether I'm afraid he is a failure.

I see now the Engmen apologize for the mistake plus they gave us— Also they say that Swan showed the lamp to Sir Wm Armstrong not Sir W Thompson as I telegraphed you I guess it was an error in the Electrician.

Yours<sup>v</sup> Patch

Paris Expose  
Oct 3 1881 - Act 3.51

My dear Edison — Bate

The jury on telephones  
were round here today — Everything  
worked well but of course we had  
not the certified copies of patents —  
Freeman who is on the jury will bring  
some of them up again to see these  
copies when I get them — I expect them  
now everyday from Havre — The  
moteograph would operate, the repeater,  
the microphones and everything was good —  
they were ~~stuck~~ with our bores of experiments.  
Our interest there will be looked after by  
at least 3 out of the eight. the others being  
French I could not judge as I had to have  
one of the boys translate what I said to  
them

Yours Batcher

CHAS. BATCHELOR

24 Rue de la Bourse  
CABLE ADDRESS

Batchelor. PARIS.

Paris, le 4 Oct - 1881

E. E. C. J. E.

Batch

My dear Edison,

Have just a few minutes in the hustle to say a few words. I have for some days been impressing on Bailey and Lowry's mind the necessity of doing something for Barker; and now Bailey has retained him for some work here and Lowry for work in London so I guess every thing is all right. I am still in doubt however about him, in this matter, that of course he is with us as regard our system; no one here has any system but us, and consequently he will go strongly for or on that point but in the lamp itself I think he will try to show others at their best, for instance - Now I think he will want to show everybody's lamp at the candle power that the inventor designed it to run and as there is no chance of a life test to decide which lasts the longest I think the Maxim and Swan will run 30 and 20 candles respectively and consequently show more candles per H.P. than we; they running the risk of a breakage during test - Now I want the test made at all candle power, as I have tested our lamp at 30 candles and find that I can get 783 per H.P. or 234.9 candles per H.P. as against one of Maxims' and <sup>and Edison</sup> Barker ~~they~~ tested at 40 candles or 258 per H.P. - I believe we run no greater risk of breakage than they do (although we have much less surface mass) owing to much better carbonization. - I don't want to show that we would like to run at that, or that we intend to

soci run at that but if the jury are seemingly led away  
 with the idea that the number of candles per H.P. is the  
 test of the value of a lamp then I want also a test at  
 30 candles and I shall come out ahead— Maxim  
 runs high here and all his globes are black— The jury  
 are coming in next Saturday to get a preliminary idea  
 of what our system is and of course I shall enlarge very  
 extensively on it as a whole and tell all about the  
 lamp why it has a high resistance etc etc etc then  
 during the next few days they will make the tests  
 and during those tests I want it also shown that  
 we have got the best lamp also in whatever way  
 we take it— I feel perfectly sure that your system  
complete will be recognized much highly but I do feel that  
 there is a tendency to put the other lamps equal to ours—  
 I shall prevent it if I can— I think there is no doubt  
 we shall have substantial recognition in the Heliograph  
 which works splendidly in all its different applications  
 have got the Quad, Roman & Morse Aids working  
 splendidly and as Johnson has telegraphed me that  
 he will be here Saturday I intend to have them shown  
 up especially the Quad in good shape whilst he is  
 here and also try to get all that jury to see it working  
 — Big machine nearly finished — Opera house job  
 also—

More anon

Yours "Batel"

Given "Engineering" all the  
 photos I spoke of as for "Biggs & Electrician" and "Engineer"  
 he is a regular "Irish thep" and although I shall try to give it him  
 I don't believe he will put them in or if he does  
 he will put them in under a cover

Blank No. 2.

No. 226 **CABLE MESSAGE.**

107

**THE WESTERN UNION TELEGRAPH COMPANY.**

ALL CABLE MESSAGES received for transmission must be written on the Message Mark provided by this Company for that purpose, under and subject to the conditions thereof hereon, and on the back hereof, which conditions have been agreed to by the sender of the following message.

Check

19 Paris

By

H. BREWER, Secretary.

NORVIN GREEN, President.

Knoside ny  
Thos a Edison

Received at 791 BROADWAY

Oct 5

1881

65-5 ave

Incul must remitt to Senbers wife  
She has not received money since  
his absence adress Canton Ohio



**This Company is not to be liable for damages in any case, where the claim is not presented in writing, within thirty days after the sending of the invoice.**

Back - in regard  
Mrs Lumb's money

No. 43.

EXECUTIVE OFFICE,  
New York.

MORVIN GREEN, President.  
A. R. BREWER, Secy.

## Western Union Telegraph Company,

Superintendent's Office,

*New York, Oct. 5<sup>th</sup> 1881.*

*Thos. A. Edison, Esq.,*

*65 Fifth Ave.*

*Dear Sir:*

*August 19<sup>th</sup> I sent you bill of Western Electric Mfg Co. for 2 sets Quadruplex Instruments which were sent to Paris Exposition, France.*

*Will you please certify the bill and return it to me immediately? I have already written you twice in regard to this bill, so have it sent at once, as the West. Elect. Mfg Co. are anxious that it should be paid.*

*Yours,*

*Wm H. Green*  
*Supt. Supplies*

Paris Exp<sup>d</sup>.  
Paris Oct 6<sup>th</sup> 1881  
Batch.

My dear Inaut,

I sent you a small  
check to deposit at S. M. & Co. a long  
time ago. did you get it?

Also I asked you to get from Mr  
Goddard a check and deposit at  
S. M. & Co. did you get it?

Also did you deposit at S. M. & Co the  
different moneys that come to me  
on the European shares sold to Fabri?  
If you have a minute to spare send us  
statement so that I know where to look  
for money. —

Big Engine almost up, expect to start  
Saturday. — Having juries in to see us  
every day so am terribly busy. —  
Remember me to all the boys.

Yours

Batchelor

Less porter engineers want cost prices etc  
of everything I have called for these  
see them sent — I mean everything  
belonging to system. —

$$\begin{array}{r} 4800 \\ 2500 \\ 400 \\ 300 \\ 800 \\ 300 \\ 800 \\ \hline 14400 \end{array}$$

$$\begin{array}{r} 1000 \\ 360 \\ \hline 1360 \end{array}$$

120

16

$$\begin{array}{r} 240 \\ 40 \\ \hline 280 \end{array}$$

42

14 Rue de Valenciennes  
 Paris, Oct. 9.. 87

Dr J. A. Edison Morse  
 65. Fifth Avenue  
 New York, U.S.A.

My dear Sir:

Your dispatch of 2<sup>nd</sup> inst. was duly received, but owing to the fact that the firms are now engaged in their examinations of your inventions, I have not had one spare moment until today, in which to acknowledge its receipt and to say that I do not understand its meaning. You ask me to work more as Bachelulor wishes. I cannot conceive it possible for you to wish me to work in any other way than with my whole heart and mind and body for your

reputation and success. As this is the way I have worked I cannot see how Mr. Batchelor could wish me to work otherwise.

Your dispatch was opened and read by Mr. Batchelor (accidentally) and when I asked if he ever had communicated with you in a way to give rise to such a message from you, he replied "No."

Now it is too important for me to keep my head clear for 'jury talk' to muddle it up with all sorts of surmises and suspicions.

I have one object in view (as I told you when I accepted the trust to represent you at the Exposition) and I will hold right on in spite of efforts to diminish my personal influence

with those upon whom you to a certain extent depend for recognition of your services to science.

You must look to others, for the next week or two, to keep you posted in detail; - I am working for results and have not even a minute to lose in telling you of your probable complete success.

Faithfully Yours  
Otto H. Moses

Paris Exp.

Dill

24 Rue Berlioz

1150 Paris - Oct. 10.

My dear Edison,

At last the 52 Volt machine has gone completely - I attribute it entirely to maliciousness. I believe some one put some small gravel in it whilst stopped - I have been expecting it and have had a watchman at them at night as well as one at the machine and another apstatis in our saloon - We have been running all day lately for testing purposes and on starting up after dinner a few days ago it immediately tore off all bars and also legs off plates - I was right near it at the time and rushed to pass it but too late - It tore every bar off clean and threw them in all directions. I looked carefully all round but only found small gravel same as the ground is - I believe some one has maliciously done this because they intend and have used my apparatus for testing

2

This was two o'clock and at 5 o'clock I had another machine in and all 8 candle lamps in series instead of multiple are -

The armature you sent me I cannot use for the machine I wanted it as it is too long in shaft you know this machine was taken from 65 5<sup>th</sup> Avenue - This armature has never given me any trouble since I telegraphed you that I was afraid it would go although at that time it burned some wires in armature and spit out - I run 56 full lights on it all the time - The one I have put in place of 52 Volt machine is the one you sent me first after my coming I run easy 120 half lights and 6 full ones and it does not hurt it at all, no spark on commutator but for all that it runs a little and is too close to the magnets -  
I spoke to you about Barker's condenser method of testing I

did so as that method showed 107  
Volts requisite for our 100 lamp I  
could not get over this and (as I thought)  
Barker would not so. Acheson and  
I went into a series of tests to find out  
why one was different from the other  
and after a long time we found that  
the Elliot galvanometer I bought here  
was marked 8500 ohms and we found  
it only 6000 ohms, this set things  
straight — You see in our regular  
method of measuring electromotive force  
the resist. of Galv. does not matter but  
with condenser method it is a factor —  
So that is all right —

The opera house job is nearly ready  
and by Saturday it will be ready to  
work — I have learned a man  
for the Stratford K K Station plant  
which Bailey telegraphed you for  
the other day they are going to run  
40 full and 40 half and if they  
are satisfied they will use both together.  
This is big job — The man I learned  
is a competent Electrician and he  
expects to make his future in

4  
Electric lighting — he brought us the  
job — I have not as yet secured a  
place for starting manufacture  
as Bailey wants me to wait over a few  
days and see if his contract can not  
be closed — I received your  
telegram telling me to retain Lowery  
I shall get another lawyer who speaks  
English and who has nothing to do  
with either Drexel Hargis and Co or Bailey  
and consult according to your directions —  
Bailey and Lowery will write you  
about Barker and Crookes and although  
I have worked very hard to bring Barker  
into the fold they have more time to  
give you the details — The big  
machine will run tomorrow night  
the opera house job has been a rusher  
but we have a magnificent plant  
the carpenters are all on strike however  
and we are under a tent at present —  
being unable to get any work done

Yours "Patch"

*Amos*

*Paris Expos*

*Hummingo*

*New York Oct 13 1881*

*Dear Mr Edison.*

*In offering you my  
Congratulations on the  
laurels showered upon you  
at the Paris Exposition, I  
also offer you my sincere  
thanks for your great kind-  
ness, in allowing my  
little telegraph key to be  
placed under the shelter of  
your hospitality, and what  
ever indebtedness made by  
the close of the Exposition may  
be due to your assistants  
concerning my exhibit. I should  
be most happy to discharge  
it. Perhaps you will not be*

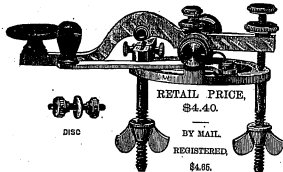


sorry to learn that I have  
received the highest prize  
given to any one single  
exhibit. No doubt the  
good company I was in  
helped me to this end.  
So I thank you again,  
and sign myself your  
esteemed admirer.

George Cunningham  
203 East 19<sup>th</sup> St.  
N.Y.

# The Cumming Periphery-Contact Telegraph Key.

NO JAR OR STICKING POINTS.



CLOSE NEEDLE-POINT CONTACT.

Mr. GEORGE CUMMING, a New York telegrapher, having long realized the irksomeness of the keys in general use, and their tendency, by the severe tension of the nerves, to cause paralysis, claims that his new principle, periphery-contact, obviates these serious evils; the key being absolutely free from "sticking," or adherence of points, without jar, and giving a more rapid and delicate transmission than any other. The device consists in the placing of two wheels or discs swinging one upon the other, at right angles; one disc inside the arch of the lever and the other cradling in the insulated standard. The electrical contact is obtained on the rim or rim of these platinum discs, instead of by the two wire points in general use for telegraph keys. These said discs are capable of a thousand surfaces by adjustment. The wheels are firmly held in place by small set screws working on the sides of the same.

## ADVANTAGES CLAIMED:

**FIRST**—The least possible contact surface—a mere geometrical point—which produces perfect electrical connection: The two discs being placed at right angles to each other, the connection between the two is only a needle point of surface. At the same time the signals are given with great precision and delicacy of stroke. We would here say that the needle point of surface has now been decided by many experts to be the scientific explanation for its properties as a non-sticking key. The infinitesimal surface of the periphery contact at right angles as a conveyor of electricity, has not hitherto been discerned or adopted till discovered by the inventor of this key.

**SECOND**—Circular surface of the rim: Thus preventing dust from accumulating easily at the point of contact and breaking circuit.

**THIRD**—Adjustability of the electrodes: For, if through any unforeseen accident connection should be arrested, both wheels, having a thousand possible points of contact, can be changed in an instant by turning each slightly on its axis to a new and bright surface.

**FOURTH**—No lateral motion: The electrodes connect firmly and perfectly, so that the trunnion can be screwed tight without affecting the correct working of the key.

**FIFTH**—Close contact: For the same reason the contact can be so regulated, if desired, that no lost vertical motion need be perceptible, thus giving a soft, velvet stroke.

**SIXTH**—No jar: The system of wheels and axles forms an elastic body, which, taken in connection with the dot-contact and close adjustment, makes it possible to work the key all day without any lost motion to fatigue the hand or try the nerves.

This key has had unusual tests and has come out of the trial victorious. It is at present being worked on the heaviest wire with thorough satisfaction. We have received the highest testimonials from the profession as to its good qualities, viz., non-sticking, elastic stroke, lack of jar, and beauty of construction.

One of the finest operators in the service says: "The much praise cannot be given to the Cumming key. I endorse all that anyone can say in its favor." Another: "It is only a question of time before its adoption becomes universal." Another, an inventor and expert, says: "I consider the Cumming key far superior to all others, it does not stick."

Every operator who has handled the Cumming key pronounces it "a treasure" and capable of giving the fastest transmission under the strongest battery, and any company who has had to pay about it. Sample key sent post-paid on receipt of price.

GENERAL AGENTS,

L. G. TILLOTSON & CO.,

MANUFACTURERS AND DEALERS IN

Telegraph and Telephone Machinery and Supplies of Every Description  
5 and 7 Dev Street, New York.

GEORGE CUMMING, Inventor, 303 East 19th St., New York. The instrument is now on Exhibition at the Edison Department of the Exposition Internationale d'Electricité, Salles 24 et 25, Palais de l'Industrie, Paris.

*Plaque medal awarded Oct 20, 1881*

Hotel Normandy,  
Paris, October 23, 1881

My dear Edison I send you by this mail the official list of awards. You will know all about it before this letter reaches you, but you will never know the satisfaction which your friends here have felt in the last two days, nor be able to realize the contrast between our feeling now and four weeks ago. I keep the recountal of particulars until I see you. I am now trying hard to get away on the 29th by the Albion but Bailey's contract is awfully in the way. Fabbi does not seem to care to have me remain in England now, and I do not see that during the next month (during which I could not stay in that clime) there is anything to be done in which I could assist very much.

Two telegrams went to you yesterday one of which was as follows:

"You have received the highest  
award in the power of the jury to give and  
I congratulate you - (signed) Joseph Wilson  
Swan

the other:-

"accept my congratulations you  
have distanced all competitors and obtained  
a Diploma of Honor the highest award of the  
Exhibition. No person in any class in which you  
were an exhibitor received a like award."

I also sent you <sup>the</sup> ~~the~~ despatch -  
explaining how the five gold medals voted you  
by the sub-jurys were committed to into a  
diploma of Honor, which though but a bit  
of paper is considered vastly more valuable.

The first despatch was written in  
my friend at the breakfast table yesterday  
where I was by invitation of Mr Swan, with  
James Stephenson, Member of Parliament for  
Newcastle-on-Tyne and President of Swan's Boy  
and Watsons' society, of-harvestly a director. Mr Swan  
said "I think I ought to have had something better than  
Marin and Lane Fox, but I admit that Edison is entitled  
to more than I! He added he has seen parts into this  
subject, vastly, than I, and foreseen and provided for  
detail that I did not comprehend until I saw his brother.  
Swan is a man of a style as different from Marin as  
you can conceive. He is a chemist and keeps a drug  
store I believe, but is a man of literary cultivation

2 very modest manner, and I should think a most excellent fellow. At any rate while he said nothing that was false and only in the casual way of conversation I have never heard more satisfactory expressions concerning you than I have heard from Mr. Swan. I doubt if there is any man who appreciates your work better than he, and he heartily appreciates it so well, because as another friend informs me - Sir Wm. Thomson who is a friend of Mr. Swan's, constantly has warned Mr. Swan and his friends that they must arrange with you or combine with you, that you are the only one who has a good system. The object of their invitation to me was, that as Mr. Stephenson was on his way thro' here to Italy, they wanted to discuss the question whether we were going to be open enemies or secret friends, or what. The question was a very fair one and I tried to deal with it as prudently as I could, my belief really being that if we could, on terms satisfactory to us, and which should put the question where it belongs, secure with their approbation a re-issue of our English patents and an organization of a Company that should in some way take in both, we should then sweep the boards in England, without that we shall not get Sir Wm. Thomson, although I believe we shall get Messrs. Brooker, I have written to Eaton about, I don't remember whether I have written about Greer with reference to his determination that until he shall be in London, and have studied the system a little more, he will be entirely independent, declaring however, meaningly, "while that if he does not go with us, his mouth will be closed," and that if he ~~does~~ go in with us, he will put his whole soul into it. This he will do, however only when he can satisfy himself that everything is sound in the technical sense, so that he can preserve his reputation to it. These English scientific men are, I find, a very close corporation, and stick together like wax, partly from affection, and partly from fear of each other. At present, Swan has got the friendship of all of them. They are proud of him, and as you will see by Professor Forbes's letter in the "Times" of the 22<sup>d</sup>, they, in the newspapers, simply assume that the incandescent lamp enclosed in a continuous globe, etc., etc., is Mr. Swan's invention.

<sup>3</sup> the outcome of 20 years continuous work. We have no newspaper voice in that country with which to contradict this, and, as in France, you cannot buy the publication of your communication through any respectable journals.

The second cable message was written in my presence at the dinner table on the same day as the first. I shall have a good deal to say to you about it, and the writer, when free you, enough for me to say at present, that as United States Commissioner, he felt it his duty to get for Mr. Maxim a gold <sup>medal</sup> ~~medal~~ Swan, Swan-Box, got medals; but that the United States Com. having two medals might have got a Diploma of Honor if he had asked for it, but he did not ask. He has in most respects satisfied me; in one or two not quite, but the explanation is one that I cannot gainsay. He is now definitely retained by me, by a conversation I had with him the day before yesterday, after the termination of his duties as jurypman, to be for Edison, day tonight, at all times, in all countries, and against all persons. There will be a retaining fee to pay him when he gets home, and he will bring you a lot of figures and information concerning everything in the exhibition, which will be very useful. I shall pay him \$100 here for a few days' consultation in England with Johnson and our lawyers. Bailey will also pay him a small fee for a report here. On the whole he will not do so badly as he will expect to have considerable employment with us.

His great action is, though, to form a Museum and Technical School in New York in which you shall be the prime mover. He is however only looking to you for aid in collecting curious things suitable for such a Museum. When he first spoke of it to me I told him of a conversation you and I had in the very early days of the Electric Light when I said to you "if we get rich out of this let us form an Edison Laboratory or School." Perhaps you will remember this, I think it was at Tarrytown.

I telegraphed you last week about a point in the contract here, which telegram will now explain, although your answer revealed to me all that I cared to

4 know. I thought, from the cables interchange, and in which there was frequent reference to an absorption of the San's contract, that you might suppose that when you paid to the new syndicate, the commission or interest of 28%, which they are to have in all local business in France, and had surrendered to them the manufacturing here upon the terms agreed on, that you were to have nothing more to pay to anyone. This you might naturally think because you are making both contracts with us here. But I am informed Wadson has no interest left or comparatively none, in the old contract, and cannot control the owners of it. He hopes, by offering them a chance of coming into the new syndicate to induce them to surrender the old. By the 14<sup>th</sup> section of the old they are entitled to 5% of all such business as you are now doing with the new, and will of course, claim it. You will therefore have to pay them 5% out of anything which you receive out of the new contract. I was not sure that you understood this, and was unwilling to approve of a scheme of contract which necessarily involved that, without a clear understanding. I saw by your answer to Bailey, that you had comprehended it, and as your explanation question would require a rather long explanation, I authorised Bailey to send for me a short dispatch, substantially as follows:

"Neither syndicate demands anything  
and your answer gives me all the information  
I require."

I shall hurry up the contract and get away from here<sup>on</sup> Wednesday night if I can, or on Tuesday night if possible. It will be very rapid work and will greatly disappoint Bailey, for when I parted with him last night, he expected that I would remain over for another month. There are various reasons why I cannot. In the first place I have many personal and private reasons for being at home. Next, I had the coming month or two months here, fearing that I may have an attack of my old trouble and be laid up; but, beyond all that it appears to me that if today, it will be rather

5 I thought that to stay unnecessarily, and the inconvenience to myself, ~~the~~ value to others will not be understood. This is rather a difficult matter to speak of, because it seems like blowing one's own trumpet, and I don't know anything more disagreeable than to be thought to overvalue one's own importance. This is a risk I am unwilling to encounter under the circumstances. So I shall get through in Paris if I can, if not I will leave things in the best condition I can to have the contract executed. I will put Batchelor in the hands of a good and safe lawyer who speaks English, and the terms of the contract being all settled, there is not much risk in that, i.e., a point is arrived at, at which I can withdraw without any serious risk, although if I felt free to remain here, I can see very, very many points at which I could be of the utmost service to the European. Bailey is overworked, and excited. Batchelor is inexperienced - first rate in his place, but of slight importance in the field to which I refer. Moses, whose mind is more fruitful, is, according to Bailey's ideas not sound, and Bailey has taken a great dislike to him, while the state of things between him and Batchelor is such as to rob Moses of most of his usefulness. I must tell you that I think the trouble between Moses & Batchelor is one of those unfortunate pieces of business in which neither party is to blame, but which is irreconcilable. Many people have remarked in my hearing how well Moses represents you in all communications with the French and German people. He is polite, assiduous, perfectly intelligent and as faithful as a man can be. I don't see how you could have got on without him or someone like him. Batchelor on the other hand suits the scientific and practical men exactly, but for all others, even those who speak English, he does not come up to the mark, does not see the point in conversation, and omits certain little things of finesse and tact which have been so necessary in a Congress like this, where one needed to make friends. This resulted only from lack of experience in such things. However, the friends have been made and you are at the top of the ladder in this Exhibition. Nobody

6 for a moment questions now that you are the great man, and that you have contributed more to its interest and success than all others put together. Perhaps I ought to except one person, Siemens, I think believes himself the great man, and Professor Forbes concurs in that opinion. However, Forbes speaks very respectfully of you in this last letter, and Brece has promised to take care of him entirely.

I am feeling very well now, - better than for a long time before as is proven by the fact that I have seldom in my life worked harder and more hours than during the last month. I have scarcely been to a place of amusement or interest with my wife since we reached here.

The big dynamo started on Friday night with perfect success, with one brush on each side. There was scarcely a spark to be seen. Lord Brasgford looked at it for half-an-hour, and finally turned to me and said, "I never saw anything run so perfectly." Harbman told me it was a most "wonderful" machine. Brece said it was splendid. Your light for the first time looked what they really are. The fact is, they have been pretty sick with the miserable little engine which Batchelor was able to provide.

Iry and catch Freeman as he goes thro' New York, and get his ideas about the Exhibition. I think Freeman is a very square man in every respect, and I think he is very sound on all, or nearly all the questions in which you are interested. At any rate, see him. He sails in the Britannia which sails about the time this letter goes. Bailey informs me that the Paris engineers believe your system good for 100 miles, but are doubtful whether you can distribute it at a greater distance. The editor of the Figaro told me on Saturday that he should go over to New York to see the opening then I advised him to wait until we had been running for a month or so, and arranged to give him notice. He got me talking for half the day in giving him prompts about you for an article. The correspondent of the Daily News some time



I ago did the same and made an article  
which I did not like when I saw it.

Give my love to Eaton. I hope  
you appreciate what a man you have got  
in him. He is of the sort not made much  
more frequently than a big dynamo, or than  
you are.

Mrs Conway sends her kindest  
love to Mrs. Edison and hopes sincerely she is  
better than when Major Eaton wrote a few  
days ago.

No decorations were given by the  
Exposition but something may yet be done  
on that subject satisfactory to you!

Ever truly yours,

Long

*M<sup>r</sup> Morris  
Please translate*

MINISTÈRE DES POSTES ET DES TÉLÉGRAPHES

EXPOSITION INTERNATIONALE D'ÉLECTRICITÉ

SOUS LE PATRONAGE DE L'ÉTAT

PARIS 1881

COMMISSARIAT GÉNÉRAL

Palais des Champs-Élysées  
PORTE N° 10

Les bureaux sont ouverts tous  
les jours de 9 heures  
à 5 heures.

Paris, le 24 Octobre 1881

*File*

*Monsieur,*

Vos honorables représentants à  
Paris, Messieurs Fuskas & Bailey,  
ont bien voulu me faire parvenir  
de votre part, votre portrait, revêtu de  
votre signature.

Je vous remercie cordialement de  
cette preuve d'estime et de cet hommage  
gracieux. En regardant vos traits  
photographiés, je me consolerai de  
n'avoir pas eu l'honneur de connaître  
personnellement et de voir à Paris

*Monsieur Edison  
à Menlo Park  
États-Unis d'Amérique*

L'homme dont les belles inventions  
ont été l'un des brillants succès de  
l'Exposition.

Gardez moi le souvenir que je  
vous garderai et laissez moi l'espoir  
que nos relations ne finiront pas  
avec l'Exposition.

Avec, Monsieur, l'assurance  
de ma haute et affectueuse  
considération.

Le Commissaire Général

C. Berger

Paris Oct 24 1881

J W Edison Esq

For your honorable representatives  
Messrs Puskas & Bailey have kindly conveyed  
to me your portrait adorned with your  
signature

I cordially thank you for this proof of  
esteem and for this gracious acknowledgment.  
In looking at photographed features I shall  
console myself for not having had the honor  
of knowing you personally and seeing ~~you~~  
at Paris the man whose fine inventions  
have been one of the most brilliant successes  
of the Exposition.

I shall remember as I shall  
remember you and leave me the hope that  
our relations shall not terminate with the  
Exposition.

Accept the assurance of my high and  
affectionate consideration.  
The General Commissioner  
J Berger

[FROM SAMUEL INSULL]

Oct. 24th,

George Cummings, Esq.

3 North 8, East 10th St. City.

*Dear Sir -*  
*22*  
*3*  
*4*  
*5*  
*6*

Mr Edison requests me to acknowledge your  
card of the 23rd, and thank you for your kind congrat-  
ulations; at the same time he would beg to congratulate  
you on your success at Paris.

I do not suppose there have been any expenses  
chargeable to you, but if when our accounts come in, I  
find there are some, I will advise you of the fact.

Yours truly,

Secretary.

CHAS. BATCHELOR

~~25 Rue de la Paix~~

CABLE ADDRESS

Batchelor. PARIS.

Paris, le Oct 27<sup>th</sup> 1881

My Dear Major Eaton,

On the 9<sup>th</sup> of October  
I wrote the following to M. Leon -

Sir,  
Enclosed please find statements of disbursements made by me on acc of Electric Lighting at the Palais de l'Industrie, and amounts already placed by you at my disposal. Will you kindly further place at my disposal the balance at present to the credit of the Edison Electric Light Co of Europe Limited. Yours Cr.

Enclosure

Memorandum of disbursements made by me from Sept 12<sup>th</sup> to Oct 8 (inclusive) on acc of Electric Lighting at Palais de l'Industrie

|   |         |
|---|---------|
| Disbursements to Sept 12 <sup>th</sup> 1881 | For     |
| Sundry Expenses                             | 1241.85 |
| Freight acc                                 | 453.45  |
| Wiring acc                                  | 472.00  |
| Small power acc                             | 1332.89 |
| Labour acc                                  | 3244.83 |
| Board acc                                   | 623.60  |
| Room decoration                             | 91.50   |

2.

Test Instruments 1490.40

Large Dynamo 252.07

To 9202.52

9202.52

To 39,981.90

Rec'd th a/c

Aug 19 1881 To 14,430.50

Sept 15 " 20,000.00

To 34,430.50

This letter has not been responded to as yet but Mr Bailey told me there was only \$4,000 left to draw and this sum I have got from him and left him to get it from Leon. So you see I have drawn \$41,430.50 or about \$8084.30 - You of course will know better than I do whether this is all I am entitled to draw. I have at present disbursed about \$8000 more than this sum and I don't know who to apply to for it. I may also say that before the 15th of November (the day of closing) I shall have to disburse considerably more so if you could telegraph me to get what I want from Messrs Bailey and Puckas and have it charged to the Edison Electric Light Co or of Edison Limited it would help me out as by that time my private funds will be about exhausted.

Of course I am expending nothing on the Opera house Bailey and ~~Puck~~ <sup>the</sup> ~~being~~ <sup>that</sup> entirely themselves -

For some time past Mr. Snowy has been here and working hard on the contract; of course his value on that is great and he is handling it in such a manner that by the time he is through with it I believe there will not be a single sentence that both <sup>parties</sup> ~~its~~ <sup>can</sup> not see in the same light, and which is not measurable by any other translation after a few years have gone by. He is very anxious to get away from here at present as if he stays much longer it will be getting well into the winter. He intended to go by the Alaska this week; but if he goes now it will probably bust this contract and I have told him so. He has therefore decided to stay and see ~~them~~ <sup>it</sup> out -

The big machine works well with 400 full lights on, and we have as yet no trouble. I add on some every day and shall soon get her loaded up.

Many thanks for your letters of information. Weida called -

Yours respectfully,

Charles Fletcher



*Full*

14 Rue de Valenciennes  
Paris, Oct. 31. 87

Dear Mr. Edison,

Friends here have already telegraphed you of your complete success, and before this reaches you Dr. Barker will have given you the latest news in person, so I have nothing to add but my congratulations.

~~The Exposition~~ is drawing to a close, and but for a decoration which may be reserved for you, I think "The subsequent proceedings will interest no more." Still there is a good deal of hard work to be done, as the crowds of people who throng the Salles d'Edison day and night contain many who now mean business. As the Congress by its award has set a valuable seal upon your electric light, I expect from now until the 15<sup>th</sup> Nov.

to have my hands fuller than ever (if possible) with demonstrations of the working system. Already many committees have been sent to examine and report from foreign countries, and scarcely a day passes without a number of applications for detailed information from their reporters. All this has kept me very busy since the awards were distributed, and I have not had leisure until this moment to talk to you or a bit of personal business. Nor did I want to bother you with it before, because it would have lead to arguments and criticisms which would have obstructed the good work being done here; so I have let things well along until now when I can without hesitation speak of things which have occurred, which

and about which there is no longer any necessity to keep silent.

When I came to Paris at your request to take up arms against a sea of troubles I did not stop to debate about communication, thinking that when Mr. Batchelor came along everything would be all right; so I floated along with what money I had brought with me for a couple of months until I ran dry, and then called on him for a small advance. This he handed and accompanied with a remark which prevented me from accepting it. The <sup>enclosed copy of a</sup> ~~accompanied copy of a~~ letter I wrote him, returning the check he gave me, will explain my position at that time, which was a most delicate one. I had come to Europe on your business without a letter of credit and without

a single letter of introduction. To  
fit up your rooms properly, I had to  
obtain considerable loans of valuable,  
in the face of much prejudice and  
suspicion. To obtain access to high  
officials I had to represent myself  
as your delegate, and to win friends  
for you I had to speak with authority.  
All this occurred before Mr. Batchelor  
arrived, which was but a few days  
before the opening of the Exposition.

Now for me to have acknowledged  
I worked without your express ap-  
pointment, would have injured you  
in many respects by destroying  
my power to do you good. Rather  
than do this I have preferred  
to rely upon my own resources,  
though I never calculated to do so  
when I left New York. In the

face of such mental and physical  
exertion as I have undergone willingly,  
by for you, I never expected to have  
financial trouble too. What was  
sufficient to support me comfortably  
in America, did not answer for  
a representative of your decline  
light interests in Paris, the most  
expensive city in the world. So you  
can see my life has not been passed  
upon a bed of roses.

Well, I will see whether you ap-  
prove this sacrifice - it may look  
quixotic, but my reason dictated  
the course I adopted at the expense  
of my feelings and the comfort of  
my family; for my wife never  
would enjoy a pleasure which she  
thought might inconvenience me.

For a proper appreciation of my

claims it has been necessary to re-  
call some circumstances which I  
would have been glad to bury in obli-  
vion, but for a just estimate of  
the extent of my services to the  
European Co. and yourself, I  
must depend upon the results at-  
tained and the judgement of  
others who have no interest in  
diminishing the importance of  
my labors. What my remunera-  
tion is to be will depend upon  
you, and I know you will state  
my case properly to those who,  
with you, are now providing suit-  
able rewards for the services rendered  
during the Expedition by Mr. Bailey,  
Mr. Batchelor and myself.

Trusting to your friendship  
at this most important moment

I remain,

Faithfully yours  
Otto Adoloes

Copy of letter to  
Mr. Bachelor  
returning check  
Paris Aug 25<sup>th</sup> 1881

44 Avenue de la République  
Paris, Aug 25<sup>th</sup> 1881

Charles Bachelor, Esq.

Dear Sir,

When you handed me a check yesterday afternoon, which I asked of you, as Mr. Edison's secretary, you told me "Now I was being paid by you, I was to consider myself on the right of any of the other men like you Apple for instance". These words are so little in accordance with the acknowledgment on the official catalogue and on the printed cards which I saw on your desk, in which you have sent my name into the world as a competitor with yours as that of ~~the Edison~~ a director at the Edison Exhibit, that I am overwhelmed with astonishment at the above remark. Now what really it was at Mr. Edison's request I came to New York to represent him at a time when I thought my services must be of value in that position. Only by appearing in such a capacity was it possible for me to see to negotiate with the considerable houses which loaned him \$50,000 francs worth of cables. Were you now to seek to force me to acknowledge that these acts were entirely without foundation authority, you would be doing me the injury that I cannot do to advance. Now then, the moment has come when the ignorant and thin engineers arguing to reduce the value of the Edison Exhibit, are about lighting on it critically, (as)

we saw yesterday at their first meeting  
with us, just after their first consulting with  
us before you handed over the check.  
it is important there should not  
be any question of precedence raised as  
to who has authority to speak in do  
praise and who not. Again, it would be  
trying to paralyze my tongue with the men  
of science and influence who are here to  
attend the Congress, and who I daily meet  
intentionally, all year long to prove to them,  
now or hereafter, I am to perform yet, for  
but the function of interpretation of your thought,  
it might lead to my exclusion from the circle  
to which I by education, profession and position  
belong, did I express any view of my relations  
closer to their relations in the language of our  
little faith. In order then, that this cannot be  
any possible reason for you doing anything  
to our own pleasant personal relations, I  
beg to return the check you handed me  
this morning. Truly Yours,  
W. A. M. W. W.

Cpy of Letter to Mr. Washburn

Banton. O. 8<sup>th</sup> Nov<sup>r</sup> 1881.

Dear Sir.

Please remit Mrs Ph  
Scipel.

*Edison*

*Amosino Light*  
*Electric Light*

International Exhibition of Electricity

United States Commission *Edison*

~~Paris~~

Philadelphia Nov. 11th

My dear Edison:—

Home again, safe  
and sound. We reached  
New York yesterday, on  
the Alaska, after a long  
and tedious passage.

Your great success  
at the Exhibition is the  
theme of universal talk  
on the other side. Mr.  
Lowery was delighted  
at the result. He now  
desires me to present a



paper to the National Academy at their meeting here next week on the Edison System at Paris, as an offset to the Marlin blast last fall in New York. I write therefore to ask you to send over to me at once 50 A and 50 B lamps half a dozen chandeliers of various sorts, a few brackets & other fixtures, safety catches, switches &c a section of your conductor with the box at the branching place, &c. Also whatever else you think would help me to explain the system as exhibited. In regard to my, time & should like to have that finished in season to light it up next week; but suppose that cannot be done. When I came home yesterday, I found a postcard dated July 26 stating that a box of wires from Messrs. Partridge & Co. had arrived in my order. As it has not been delivered here I presume it was sent back to them. Partridge, Mr. Allen would know what I need to finish things up. How long it would take, to light my house from the University would be a good thing as I could show

As soon as possible I shall come over to New York and have a talk with you. I am sorry in many respects that you did not get to Paris. You would have been received very enthusiastically, I am quite sure.

If you can run over here next week I wish you would. Mr. Rogers has a reception Wednesday night & I would like to have you there with me.

Cordially yours

George F. Barker.

University of Pennsylvania.

*Amud*

*Paris Exposition*  
*14 Rue de Valenciennes*

*Paris, Nov. 21. 87*

*My dear Mr. Edison, Moses*

*To the sound of all  
the steam whistles, fog horns, bells, gongs  
and electrical noise makers in the vast  
Palais de l'Industrie, the Exposition  
came to its appointed end last night.  
A delay of five days had been required  
by the Syndicate on account of the  
tardy opening on the 11<sup>th</sup> August, to fill  
the measure of time upon which they  
had based their calculations. The pro-  
ceeds of the two last trading days were  
given to employees and the two last  
days were free for the public. We  
have already stored away a great  
many small articles and will begin*

packing at once. We have had quite a number of things damaged by the curious crowds but they can be easily repaired in London. Col. Gouraud has been here a week, making arrangements for exhibitions to be represented at the Lydenham Palace. Quite a number of the most important <sup>for opportunity</sup> are going. We have had applications from Mascart for the 'Collège de France', the Director of the Arts et Métiers, and a new electrical museum to be established (out of the debris of the Exposition) at the Chateau d'Eau. However, I do not see what can be done, if our whole plant is going to England. It would be well however to give something

to Mascart, who, aside from his having assisted you in the Paris, is a historian of science. Besides, it would be well for you now to keep quiet, for sometime, all the recollections of you planted in the minds of savants here. If such were done, the culmination of your fame might yet be reached this year.

As I have not yet received a reply to my letter of 31<sup>st</sup> ult, I cannot say what my movements will be. If you have not written, please telegraph a short (and sweet) reply.

Faithfully yours  
Otto A. Moses

*List of Goods Sent to C. H. Johnson*  
*Dec. 3rd*

76 of Cash

- |     |  |
|-----|--|
| 896 | Table shelves  |
| 897 | Automatic Apparatus  |
| 898 | Street conductors, (Samples)   |
| 899 | do do do   |
| 900 | do do do   |
| 901 | 2 Universal Printers—1 Bracket for Gold and Stock—2 Selfwinders—1 Sounder—1 Pressure Relay—1 Key |
|     | 3 Binding posts for Gold and Stock   |
|     | Instructions—1 Press, Battery for Electric Pen—Experimental Lamps                                |
|     | Paper for Automatic—Leyden jars  |
|     | White sand & Black sand—Capit Lamps  |
|     | Hand Motograph—1 Sounder—2 Key   |
|     | Paper for Hand Motograph—  |
|     | Screws for tables—Photograph Relay   |
|     | 2 Keys—1 Switch—Stand for Singing Telephone—Screws for tables—                                   |
|     | 2 Glass bells & Brackets for Muring lamps  |
|     | 15 Reels for Automatic paper—  |
|     | Stand for Vibrator—1 Sounder—  |
|     | 1 Instrument for Duplex Telephone—   |
|     | 2 Relays—2 Switches—Plugs  |
| 905 | Automatic table—   |
| 908 | Samples of bamboo & carbon (2 show cases)  |
| 909 | 1 Test table—  |
| 910 | 2 Weber meters—  |
| 912 | Glass partitions for Automatic tables  |

|     |   |
|-----|---|
| 913 | Picture of ore milling machine —        |
|     | 4 supports for street main on exhibit — |
| 914 | Glass jars quad                         |
| 915 | 1 Galvanometer table —                  |
| 916 | 25 Glass jars for quad —                |
| 917 | Paper for automatic telegraph           |
| 918 | do do do do                             |
| 919 | do do do do                             |
| 920 | do do do do                             |

*List of Goods sent to C. H. Johnson.  
at Crystal Palace, London.  
Dec 5<sup>th</sup>*

|     |   |
|-----|---|
| 890 | 1 House boy — & Iron legs for tables —  |
|     | 6 pieces for automatic tables —   |
| -   | 3 Iron brackets for tables —  |
|     | 7 Copper connections for conductors —   |
|     | 11 Signs Edison —   |
| 891 | 1 Small table —   |
| 892 | 1 turn-down lamp — & Carbon lamps —   |
|     | 1 Etherscope — Telephone — 4 Induction<br>transmitters — 1 Telephone repeater — |
|     | Instruments for automatic —   |
|     | 1 Odoroscope —  |
| 893 | Ore milling machine —   |
| 894 | Iron brackets for tables — Zinc and<br>Copper for battery —                     |
| 895 | Quad. tables —  |
| 902 | Street conductors, (samples)  |
| 903 | 1 Respiration table   |

- 906 3 Key perforator—1 Vibrator—2 Stock  
 printers—2 Paper reels—1 Pressure Relay  
 9 Transmitters—1 Ringing Telephone—  
 1 Carbon Skip Relay—1 Relay & Sounder  
 1 Key—4 Inertia Transmitters—  
 907 Table legs  
 911 24 jars for quadruplex battery  
 921 Morse perforator  
 922 Roman letter perforator  
 923 Embossing telegraph instrument  
 924 do do do  
 925 41 Meters for houses (samples)  
 926 Plate Glass for tables  
 927 Domestic recorder table  
 928 Quadruplex Instrument—Telephone  
 Brackets—1 Belcher—  
 929 Quadruplex Instruments—Sounder  
 930 3 Glass covers for instruments—  
 931 Quadruplex instruments—Sounder  
 and Key for Expansion Relay—  
 2 Lead weights for Moring lamps  
 2 Glass jars & brackets, marking lamps  
 932 6 Scales for reflecting Galvanometers  
 934 Sand for ore miller  
 935 1 Resistance—4 Hangers for automatic  
 41 Diaphragm Telephone—16 chalk battery  
 1 Relay  
 936 Expansion Relay—Magnets for ore  
 milling machine—Experimental  
 lamps  
 937 1 Commencing telegraph key  
 1 Base large chalks—12 rollers for

|            |                                |         |
|------------|--------------------------------|---------|
| Automatice | 4 Bran/roller                  | 3 Paper |
| 938        | need for automatice            |         |
| 939        | 5 Glass covers for instruments |         |
| 940        | 1 Small table                  |         |
| 941        | 1 do do                        |         |
|            | Automatice paper               |         |

Paris Exposition  
 1889  
 4th Avenue and Ave  
 Paris 15th Avenue



195. 1881.  
Brenton O. Dec 7<sup>th</sup> 1881.

Dear Sir.

please will you be so kind  
and let me know when my  
husband is going to come  
back to New York I would  
be very much obliged to you.

Mrs. Dr. Seibel.

International Exhibition of Electricity  
United States Commission  
Paris

Elec. R. R.  
Dec. 7. 81

Walter

Philadelphia, Dec. 7, 1881.

My dear Edison:-

Your telegram was received late this afternoon. Thursday is my busiest day with my classes and therefore I do not feel that I ought to be away if it can be avoided. I will come over on the early train on Friday and be with you about ten, if that will answer your purpose. If you want me

to come then please wire me  
to that effect tomorrow.

I concluded, after I left  
you on that Sunday, eve-  
ning, to come home instead  
of remaining longer in New  
York. So I came home on  
the 9 o'clock train. It was  
well I didn't expect Mr.  
Lowery on Monday, as I  
see the Arizona didn't ar-  
rive until the close of the  
week, having had a very  
severe passage. I hope  
both Mr. & Mrs. L. are well  
and are by this time recov-  
ered from the ill of the  
voyage. If you see him, I  
wish you would remember me

to him by the way, it might not be as bad idea  
should I come over on Friday, to arrange for  
a conference between Mr. L. yourself myself. I  
should like to meet him and there are some  
matters to be talked over between us.

In a letter received a day or two ago from  
Mr. Trease, the celebrated engineer, who is  
President of the Experimental Committee of the

Electrical Exhibition, he says that the tests  
have been going on since 11 A.M. Your large  
machine, he tells me, ran 5700 lamps, large  
lamps, with an expenditure of 76 horse power.

Hee also says that 100 incandescent lamps were run on the Weston machine but he doesn't give the power consumed. He asks for a report from our sub-committee on incandescent lighting, to be incorporated in the general report.

What do you know of the "American Electric Light Co."? I have been asked to accept a retainer as their expert. Ben Butler, I understand is their counsel. Have they anything?

M. Leon Vidal, editor of the "Moniteur de la Photographie" Paris, says in a letter to the Phil. Photographer, that "the Edison lamp deserves to be placed in the first rank".

Cordially yours  
George F. Barker.

Ministère  
des Postes  
et des Télégraphes.

Cabinet  
du Ministre.

Paris, le 17 Décembre 1881.

Monsieur,

Au moment où l'Exposition d'Electricité vient de se terminer, le Président de la République française a tenu à donner un témoignage de sa gratitude à ceux dont le concours lui semble avoir le plus puissamment contribué au succès de cette grande manifestation.

J'ai la satisfaction de vous annoncer que, sur ma proposition, mon collègue, M. le Ministre des Affaires étrangères, Président du Comité, a fait signer un décret par lequel vous avez été nommé Officier de l'Ordre national de la Légion d'Honneur.

Vous recevrez par la voie diplomatique les brevets et insignes de l'Ordre, mais j'ai tenu à vous faire part sans délai de cette nouvelle.

Agitez, Monsieur, l'assurance de ma considération  
aux plus distingués.

Le Ministre des Postes et des Télégraphes,



Monsieur Edison

Minister  
of Post  
and Telegraphs

Paris Dec 17<sup>th</sup> 1881

Mr Edison Esq.

Sir.

On the occasion of the closure of the Electrical Exposition the President of the French Republic considered it appropriate to show his gratitude to those whose competitions appeared to him to have been most instrumental in making the great show a success.

I take pleasure in informing you that, agreeably with my proposition my colleague, the Minister of Foreign Affairs, President of the Council, has caused an order to be signed by which you are created an Officer of the National Order of the Legion of Honor.

You will receive through the diplomatic representative of France the patent and insignia of the Order, but I thought proper to send you the news without delay.

Please receive, Sir, the assurance of my highest esteem.

The Minister of Post & Telegraphs.

(sig) Cocheray

Batchelor.

Make  
Have first class cuts  
made of ~~the~~ important  
Exhibits - with abundance  
of electrotypes to

distribute where do  
most good get some in  
new edition Catalogue -

Kenby

Cable address  
"Batchelor Paris"

52 Rue la Boétie  
Paris -

My dear Insal

Thanks for many  
letters. Put on our code -

{ Geo. F. Barker for Abortion }  
{ Dr. Herz. " About }  
Hiram Maxim " Above

See Maxim privately and ask  
him if any kind of induc-  
ement has been held out to  
Barker to show up our good  
points. It won't do to let a  
man like him lay around  
here when Maxim and  
Swan are in want of just  
such a man and besides he  
could be of use on telephone  
etc as he is a relative to  
the Congress. (Cable if necessary)  
Batchelor  
Yours Batchelor

Insal

Your bill of lading  
by the Gallia came in  
about 2 hours earlier than  
the one by Labrador -

Please send me full list  
of copper wires bare and  
covered all sizes with prices  
from two or three manufacturers.  
Batchelor -



## INTERNATIONAL EXHIBITION OF ELECTRICITY.

--0--

### INCANDESCENT ELECTRIC LAMPS.

In a previous article we indicated in what case this system of Electric Lighting was specially applicable, and we saw that henceforth, thanks to important improvements recently introduced, it could be employed for the interior of houses, where light of feeble intensity is used; we have seen that several castles in England were lighted in this way, and that a certain number of houses in the city of New York had subscribed for the light furnished by the Edison Electric Light Company. Since the successful introduction of these lamps a great number of systems of the same kind have been brought out by different inventors, and without speaking of such well known ones as those of Edison, Swan, Maxim, Lane Fox, Sawyer, we know of about fifteen inventions, bearing more or less upon the subject. It therefore seems to us an opportune moment to enter into circumstantial details about this method of lighting which up to this moment has not excited any great interest in Europe for various reasons which we have enumerated in different articles published in this journal at the commencement of the year 1880, of which the principal one was the relative considerable expenditure of motive force to produce a light of given intensity. It should be borne in mind that the luminous power of

an incandescent body increases in a much greater ratio than the calorific intensity; therefore, by the very fact that incandescent lamps permit a greater division of the electric light, a loss is caused by the weakening of the radiating power resulting from the same. Nevertheless the satisfactory results recently obtained forced us to pass these systems of electric lighting in series, and we will begin naturally enough with that of Mr. Edison, which has made the most noise in the world and which has attracted attention to this manner of lighting by electricity.

#### EDISON'S SYSTEM OF ELECTRIC LIGHTING.

The incandescent system was first represented by lamps made from an incandescence platinum wire, and the interesting experiments made in 1879 by M. de Changy should be recollected; but the practical workings of this system were not satisfactory, principally because of the disaggregation and partial fusion of the wires, and in spite of the numerous improvements brought to bear on this system by Mr. Edison who, by one of the most ingenious of processes had rendered them more infusible and harder, still they had to be absolutely rejected at least for ordinary lamps. Then it was suggested to employ carbon which if not allowed to burn is infusible in the highest heat developed in the lamps, and different arrangements of apparatus were put together at various times by King, Lodyguine, Bouliguine, Swan, Sawyer, etc., some avoiding combustion by enclosing the lamps in receptacles where a vacuum had been obtained, others by filling these receptacles with gases unfit for combustion, as nitrogen or oxide of carbon, or simply by

leaving the air shut up in the receptacle to be vitiated by an incipient combustion.

All these attempts had but partially succeeded, to say nothing more when in 1879 the new incandescent carbon lamp of Mr. Edison was announced, and many savants, and myself in particular, doubted the exactness of the allegations which came to us from America. The carbonized paper horse shoe appeared incapable of resisting mechanical shocks, and of supporting incandescence for any length of time. At this epoch Mr. Swan himself said that up to that time, he had not been able to obtain any very satisfactory results by an analogous disposition of the incandescent organ.

Mr. Edison however was not abashed, and in spite of the lively opposition made to his lamps, in spite of the bitter polemic of which he was the object, he did not cease to perfect it for practical purposes, and has at last produced lamps, which we have seen at the Exposition and which can be admired by all the world for their perfect steadiness. These lamps to the number of 160, light the two salons reserved for the discoveries of the ingenious american inventor, and we shall see still more important results upon the installation of the great machine, which is expected from America.

As at present made, these lamps are sufficiently solid and can last a long time. The originally fragile carbon has become extremely elastic and hard, and of such attenuation that it can be well compared in size to a horse hair. By a cleverly combined system of fastening the platinum, conducting wires are not exposed to be cut, and they are so sealed in the glass receiver

that their change of volume under the action of heat does not endanger the perfection of the vacuum. By the way the carbons are treated when the vacuum is made in the globe, the bubbles of air enclosed in their pores and which in escaping disaggregate the surface, are evacuated before closing the lamp, and at the same time the filament of carbon acquires a peculiar density and hardness as was the case with the platinum wires. To obtain this result the carbonized filament must be brought into incandescence while the vacuum is being made. The very nature of the substance of vegetable origin, employed in its fabrication has been modified. Fibres of bamboo are now used instead of the paper originally employed. These are carbonized by a certain process and the successive transformation of these fibres into carbon filaments may be followed in several collections to be seen at Mr. Edison's exposition and which will gratify the curious, and are worthy of study. According to Mr. Batchelor and Mr. O. A. Moses, co-laborers of Mr. Edison and who represent him at the exposition, the resistance of these filaments is 125 ohm when brought up to an incandescence corresponding to 16 candles, but it can vary according to the luminous power desired of the lamps, for it can be distributed between two lamps whose filaments are correspondingly more or less long. Their extremities which are enlarged are pressed in a kind of pincer which terminates the platinum conductors and which are soldered by an electrolytically deposited copper. Fig. 1. represents the actual arrangement of these lamps. Their duration from what I have been assured is long enough; however they must wear out. Although most of them<sup>may</sup> have served for 1200 hours, the

question may be asked whether a lamp capable of deterioration may be considered a practical thing, but if it is considered that this lamp can be furnished for 30 cents, that the adjustment on its support cannot be any simpler than it is, which is evident on inspection, it is easily seen there is no more trouble to replace one, than to renew a broken lamp shade.

What constitutes Mr. Edison's system is not alone his lamps, it is the totality of the arrangements referring to them and which have attained such a degree of simplicity that henceforth nothing remains to be desired in practice. Generating machines, distribution of circuits, installation, indicating and regulating apparatus, metres for measuring the amount of current employed, are all combined for immediate application and as we have said, this application is about being made in a part of the city of New York, when a great number of houses are to be lit by this system by means of a subterranean distribution from a central station, from which also motive power will be distributed to the houses.

This central station will be provided with twelve steam engines of 150 horse power each, actuating dynamo electric machines, each of which will be capable to supply it is said, 2,400 lamps of 8 candle power. The current furnished to these lamps, comes through a branch taken before each house from the large sized conductors laid in the streets. These deviations bring the poles of the generator into each house, where the lamp wires can be brought in connection with them, thus rendering each house independent of

any other, both for a supply of light and motive power.

When it is considered that the system of distribution adopted by Mr. Edison, the total resistance of the exterior circuit is extremely reduced and that with 2400 on, it is only  $\frac{2}{3}$  of 2400, say about  $\frac{2}{3}$  of an ohm, it can be seen, a very feeble resistance should be given to the generating machine; so that its first arrangement has been modified. To begin with the field magnets were arranged on a derivation taken from the commutators, putting it into the induced circuit as in Wheatstones' & Sieman's system. Then the armature was arranged on Sieman's principal so that the wire consisted of bars of copper. These bars lie close to each other around the cylinder which forms the armature, and they generate the current. Their extremities correspond to discs of copper (at right angles to them) laid one against the other at the ends of the cylinder and insulated from each other. Each bar is fastened to its corresponding discs in such a way as to form a single circuit enveloping the cylinder longitudinally, and which is made perfect through the coupled bars two and two with the commutator blocks (made after the Gramme's pattern.) Fig. 2 & 3 gives an idea of this new arrangement. The center of the cylinder itself is occupied outside of the rotating axle by a cylinder of wood which in its turn is surrounded by a thick tube made of a series of very thin discs of iron, separated from each other by tissue paper. This arrangement facilitates the rapid changes of polarity in the plates. This tube is terminated at its two extremities by two thick clamping discs which are made to compress the others laterally and the copper discs of the working coil occupy the two com-

partments at the extremities of the cylinder as seen in Fig. 2. Under such conditions as these, the resistance of the generator is small and permits of great sub-division of the current in multiple arc; nor is there any insulation to be burned and it is even possible in case of the deterioration of the bars to renew them easily for they are simply screwed against the copper discs corresponding to them. In the new disposition adopted by Mr. Edison, the field magnets lie horizontal instead of being placed in the vertical.

Fig. 4. represents the whole machine as now actually working in the Palais de l'Industrie.

We have described the generating machine before completing the description of the system of distribution of the current because we ought to speak of the system of control used in making the current uniform when its intensity has been modified by a variation in its distribution, that is to say, following after a variation resulting from the unexpected suppression of a certain number of lamps in a part of the system. The necessities of this system are easily understood, if we consider that this suppression can lead to a greater or less increase in the intensity of the current, feeding the remaining lamps.

In France several systems have been devised to obtain an automatic regulation, but in America it seems, it is preferred to effect this by the intermediation of an appropriate controlling agent.

In this system in whose general arrangement we see in Fig. 5. the current which feeds the lamps furnishes a deviation

at the machine bb which enters an electric dynamometer, after having gone through a resistance of 8500 ohms. The electro motive force should be about 110 volts and a difference of one volt should correspond on the scale of the indicating apparatus, to three divisions; consequently for each observed increase of intensity a resistance capable of compensating for it should be introduced into the circuit. Mr. Edison has established a circular commutator a with bobbins of different resistance which permits of an increase of resistance, not in the lamp circuit, which would lead to a loss of work, but in the circuit of field magnets, which weakens their action on the working coil. From the central station also the condition of the current affecting the lamps can be controlled by means of a testing photometer which enables us to see how much the intensity of the current must be diminished or increased to correspond to a given luminous intensity. For this purpose the photometer is mounted on a little railroad placed in a dark chamber; under and in front of it is placed a scale arbitrarily divided so as to indicate immediately the candle power furnished by the current in its normal condition. The left side of Fig. 5 indicates the manner of arrangement of the testing bench with the explanatory table at the bottom of the figure. Fig. 6. shows it in perspective. The manner in which derivations are taken on the principal conductors merits special mention. The conductors are composed of two rods of copper of hemi-cylindrical form, flat on one side and round on the other, which are enveloped in cylinders of insulating material, contained in small wrought iron pipes) which are



buried under the streets. To take a derivation the cable is laid bare at the spot where the branch circuit is to be established. The two conducting rods (coming from the main conductors) are cut and bent outwards and introduced into a clamp where they are soldered to the house wires as shown in Fig. 7. but in order that no harm can be done by too strong currents one of these communications is made by intercalating a lead wire in the branch circuit shown at the bottom of the figure and which by its fusion interrupts the circuit. This is what is called in America a 'cut off;' and in this way it prevents deterioration. The box is then hermetically closed and covered with an insulating coating. In the figure the branch wires are shown double but it is evident that they could be single.

We said that all arrangements had been made to make the system a perfectly practical one, and of that we will soon be able to judge. Let us examine first how the lamp supports and the lamps themselves are disposed. As has been seen they are formed of glass globes of ovoid form, cemented into copper sleeves by means of plaster and screwed into cylindrical cavities terminating the supports. These are a kind of arm which can be adapted to brackets or chandeliers or be arranged around the walls. In the last case, the arm as is shown in Fig. 8, carry two articulations A & B, and commutations are made by two plates of the hinges which are insulated, and in whose circular part two springs press, seen in Fig. 9 & 10. Connections of the conductors with the lamp as we have indicated above are made by a lead wire (cut off) which may melt and interrupt the circuit in case a too great quantity of current should be drawn.

rent should endanger the lamp.

In these brackets, as in the three branch chandeliers, represented in Fig. 11. keys have been introduced which allow the extinction of the lamps separately or together without causing any spark at the point of rupture or any danger of fire. The movement of the key *a* as shown in figure 9 breaks the contact by means of a conical stopper which terminates the screw of the key, and which when separated from the two plates through which the current passes when the stopper is in contact with them, breaks the circuit at two points and on a surface of sufficient extent to greatly diminish the spark at the point of rupture.

The lighting of the two salons of Mr Edison at the Exposition is done by 16 small chandeliers like the above, two grand crystal chandeliers, and 80 brackets. Fig. 12 represents one of these chandeliers.

The effect is very beautiful, the steadiness being so complete as could be desired, and if as I have been assured the price of this kind of illumination is lower, light for light, than gas, it may be considered that the problem is on the eve of solution for Edison's system of electric lighting is placed in the same condition as that of gas. He avoids the presence of machines in separate houses which always are in the way, and which by their very nature require care and management not to be obtained from ordinary servants.

As a compliment to his system, Mr Edison has constructed portable chandeliers represented in Fig. 13. and a current regula-

tor shown in Figures 14 & 15 which permits of reducing the light in any desired proportion. It is a carbon rheostat composed of carbon pencils of different sections which as the current passes through one or the other allows any desired intensity. The apparatus is enveloped in a cylindrical cover pierced with holes to allow of the escape of heat and surmounted by a lamp which indicates to the eye the desired degree of luminacy. It is worked by a disc shown separated in the lower part of Fig. 14. and which can be turned so as to bring a contact spring on any one of the supports of the carbon whose position is indicated by an index and divisions engraved on the base of the cylinder.

But what is most interesting of all in these accessories of Mr Edison's system, is the meter which determines the amount of electricity consumed by the lamps. There are two kinds, one automatic like a gas meter, the other requires weighing. They are however both founded on the same principle that is to say, in the estimation of work by the weight of <sup>a</sup>copper deposit produced by the current used. We will describe these two interesting pieces of apparatus hereafter, and give drawings of them; today we must be content with only mentioning the principle involved.

Imagine a balance having at the extremities of the beam two cylindrically rolled plates of copper forming two electrodes. Let us admit that these two systems of electrodes, which plunge into two vessels filled with a solution of sulphate of copper and furnished with fixed electrodes, are traversed in an inverse direction by the current employed, and which can cause the balance to operate under a given weight of copper deposited from the solution.

It is easily seen that the movement brought about by these conditions can set in motion a current reverser which can change the conditions of the deposit in such a way, that the electrode covered with copper is transformed into a soluble electrode, while the one which was originally in that condition becomes the reducing electrode. From this time on, an oscillating motion of the beam of the balance is established and more or less frequently repeated according to the rapidity of the formation of deposit, that is to say, according to the intensity of the current.--As the same movement can bring about the passage of a derived current (taken from the total current) across a special electro magnet, which commands the movement of a counter, it is easily seen, (after the determination of the number of Amperes corresponding to the weight of the deposit, which produces the oscillation of the balance) what is the quantity of electricity consumed.

The realization of this idea has necessitated some electro magnetic arrangements which we will describe in detail when we get the drawings of the apparatus.

The other system is more simple, consisting of two voltmeters of sulphate of copper whose electrodes can be easily taken out and weighed, as the work done can be calculated from the weight of copper deposited. One of these voltmeters is open to the subscriber, the other is kept closed by the controller. Resistance bobbing introduced into the circuit corresponding to these resistances, permits of the employment of greater or less periods of registration.

A small incandescent lamp placed beneath the apparatus and which

can be thrown into circuit, by a simple metallic thermometer prevents any danger of freezing in extremely cold weather.

There is another application of Mr. Edison's light which can be seen at his Exposition in a model intended for lighting galleries on mines. In this arrangement represented in Fig. 16. the lamp is introduced in a glass receptacle filled with water and held in suspension. Communication of the apparatus with the circuit is arranged in such a way that the points of contact are covered by water which avoids any danger of explosion in mines infested with fire-damp.

To give an idea of the application of Mr. Edison's systems, we have represented in the large engraving accompanying this article Fig. 17. the interior of a parlor lighted by the small chandeliers previously described. As is seen the electric light is projected downward, the best arrangement for reading and writing. This method to be preferred by Mr. Edison, but as can be seen above described that all styles of illumination can be produced with this kind of light, analogous to that obtained with candles or gas jets: it is simply a matter of taste.

Mr. Edison's lamps are not alone employed in the two salons reserved for him, they are to be found in various places throughout the great nave, notably at the exhibits of Messrs Heilmann, Ducommun et Stienben (of which we gave a drawing in a previous article) at the exhibit of Messrs Sautter and Lemonnier. At these two places the currents are furnished by two Gramme machines type A. and each one lights about 40 lamps. Now that Mr.

Edison's great machine has arrived at the Exposition it will be possible to obtain with the incandescent system, illuminations of greater magnitude. The landing of the great staircase will be lit in this way. It is proposed to accomplish this by means of a crystal chandelier of 144 lamps and of others furnished with 25 lamps each, to be hung from the different panels, and of girandoles standing on the 16 pilasters of the staircase. This will produce an enchanting effect and a brilliant illumination. I am not quite sure that this mixture of arc and incandescent lights is a happy thought. It is evident that the latter destroy the effect of the former and might lead one to believe that the luminous intensity of the incandescent lamp is less than it really is. Again, the difference in the color of the light is so contrasted that many persons who reproach the electric for its gasty aspect find it too red in incandescent lamps. It is evidently an effect of contrast for the light of incandescent lamps is whiter than that of gas jets which nevertheless these same people find very agreeable. If required, incandescent lamps can give a dazzling white just as well as the others, it is only necessary to employ a stronger electrical intensity, then they lose their peculiar qualities, that of giving a soft light which does not fatigue the eye and of an easier and more complete subdivision.

It is certainly very difficult to satisfy everybody and that many persons hardly know what they do want, above all when the effects of contrast momentarily impair the power of judging correctly. On the other hand there are certain fault-finding spirits who

are never satisfied with anything, witness, the author of that incomprehensible article that recently appeared in a certain journal who pretended that only discordant sounds and puppet show voices could be heard in the telephones from the opera. The author in question who could perpetrate such an enormity must have had his ear as sick as his humor. The crowd passing every evening before the telephone rooms at the Exposition is the best proof of the inanity of such judgements and by this can once more be seen the value of the scientific lucubrations of certain political journals.

The same thing happens with the electric light and quite a number of persons who without previous examination and without being of the same opinion two days consecutively come to us and disparage electric lighting. It is certain that new inventions have great difficulty in coming to light and in succeeding, above all when they are opposed by rival interests, but when they are really good they triumph in time over all obstacles.

We would like to give some information about Mr. Edison's new machines but as they are not yet put up we reserve the description for another time. We will only say that the steam engine was constructed especially for this application, that it makes no noise, and that the dynamo electric machine forms one of its integral parts. The field magnets of this latter mentioned, in place of being vertical as in the model represented in Fig. 4 is horizontal and the dimensions of the machine itself are much larger.

The steam engine which works the machine is of peculiar construction and the speed of rotation which is communicated to the working coil is 350 turns a minute. This is not a very great

speed, but the armature is very heavy weighing as we are told, over three tons and a half. The magnetic field in which it turns is formed of three powerful electro magnets united so as to form but one at their extremities. In the salen of Mr. Edison are a collection of photographs among which may be seen some of the manufacturies where the enormous amount of material required in these installations is constructed. As we have been assured one of these turns out 2000 lamps a day, giving occupation to 150 persons.

In accompanying drawings and collections can be seen methods of glass blowing, the carbonizing of the filaments intended for incandescense, the vacuum pumps and the mounting and packing of the lamps. The pumps referred to are set in motion by dynamo electric machines.

From all this we see Mr. Edison's system today is completed, perfectly studied out in all its parts, and that nothing more remains to be done but to introduce it on a great scale.

Th. du Moncel.



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*1889*

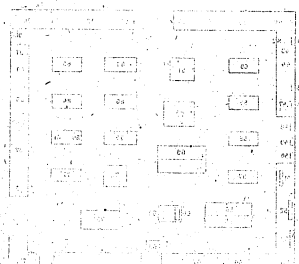
*Paris 1889*

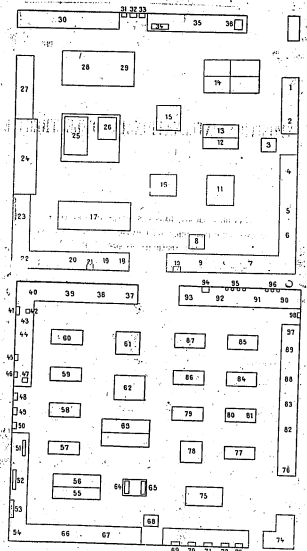
*Electricité*

1. Appareils de production d'électricité  
2. Appareils de transmission d'électricité  
3. Appareils de distribution d'électricité  
4. Appareils de consommation d'électricité  
5. Appareils de mesure d'électricité  
6. Appareils de protection d'électricité  
7. Appareils de régulation d'électricité  
8. Appareils de conversion d'électricité  
9. Appareils de stockage d'électricité  
10. Appareils de transport d'électricité  
11. Appareils de transformation d'électricité  
12. Appareils de conversion d'énergie  
13. Appareils de mesure de puissance  
14. Appareils de mesure de tension  
15. Appareils de mesure de courant  
16. Appareils de mesure de fréquence  
17. Appareils de mesure de phase  
18. Appareils de mesure de facteur de puissance  
19. Appareils de mesure de rendement  
20. Appareils de mesure de pertes  
21. Appareils de mesure de bruit  
22. Appareils de mesure de vibration  
23. Appareils de mesure de température  
24. Appareils de mesure d'humidité  
25. Appareils de mesure de pression  
26. Appareils de mesure de débit  
27. Appareils de mesure de vitesse  
28. Appareils de mesure de position  
29. Appareils de mesure de direction  
30. Appareils de mesure de durée  
31. Appareils de mesure de poids  
32. Appareils de mesure de volume  
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34. Appareils de mesure de longueur  
35. Appareils de mesure de largeur  
36. Appareils de mesure de hauteur  
37. Appareils de mesure de profondeur  
38. Appareils de mesure de diamètre  
39. Appareils de mesure de rayon  
40. Appareils de mesure de circonférence  
41. Appareils de mesure de périmètre  
42. Appareils de mesure de surface  
43. Appareils de mesure de volume  
44. Appareils de mesure de poids  
45. Appareils de mesure de densité  
46. Appareils de mesure de viscosité  
47. Appareils de mesure de conductivité  
48. Appareils de mesure de résistivité  
49. Appareils de mesure de permittivité  
50. Appareils de mesure de perméabilité

# EXPOSITION INTERNATIONALE D'ELECTRICITE

PLAN DE M. EDISON, DANS LES SALLES N° 25 ET N° 24  
DU PALAIS DE L'INDUSTRIE, ACCOMPAGNE DE LA NOMENCLATURE  
DES APPAREILS EXPOSÉS.



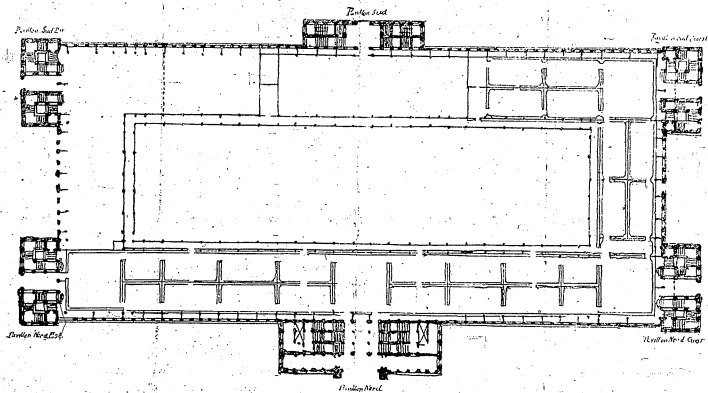


1. Chandelliers et appliques de magnan.
2. Interrupteurs de courant pour maisons particulières.
3. Télégraphe autographique.
4. Supporte de lampe portatives.
5. Lampes ornementales.
6. Soies de lampes.
7. Appliques.
8. Séparateur magnétique des minerais du fer.
9. Spécimens de minerais traités par le séparateur magnétique.
10. Lampes de mines.
11. Moteur pour machines à coudre.
12. Télégraphe Morse autographique à impression chimique.
13. Télégraphe autographique à impression chimique en lettres romaines.
14. Télégraphe quadruplex.
15. Moteur électrique appliqué à une pompe.
16. Moteur électrique appliqué à un éventail.
17. Plans de la 1<sup>re</sup> station de New-York.
18. Régulateurs.
19. Échantillons de fil à isolement non combustible.
20. Échantillons de lampes.
21. Lampes renversées pour éclairage en dessous.
22. Compoteur.
23. Appareil pour mesurer la résistance des lampes claudes.
24. Photomètre.
25. Appareil pour graduer la force électromotrice du générateur.
26. Appareil pour graduer la résistance.
27. Calorimètre pour mesurer l'énergie absorbée par les lampes.
28. Spécimens de boîtes souterraines renforcées les imperméables de conducteurs.
29. Boîtes de minerais particulaires renforcées les branclements.
30. Tubes renforcés les conducteurs principaux.
31. Téléphone microphonique à charbon d'Edison.
32. Téléphone d'Edison parlant à haute voix en Loud-Speaking.
33. Poste d'écoute au téléphone. Modèle américain.
34. Téléphonographie.
35. Spécimens de rubans isolants, cartons, etc.
36. Imprimeur d'Edison pour les lignes préposées.
37. Imprimeur d'Edison pour les lignes préposées.
38. Fil à croisé.
39. Résistance liquide.
40. Téléphone duplex.
41. Téléphone réducteur.
42. Appareil pour mesurer l'influence des contacts plus ou moins parfaits sur le fonctionnement des courants dans un circuit.
43. Phonocourant, montrant mécaniquement les vibrations d'un diaphragme.
44. Collection d'appareils montrant le développement de l'invention du téléphone à charbon d'Edison.
45. Boîte de téléphone domestique.
46. Boîte de téléphone de quartier.
47. Transmitteur micro-téléphonique d'Edison (Premier essai).
48. Téléphone imprimant des heures et marchés.
49. Téléphone d'Edison parlant à haute voix.
50. Téléphone à crin pour faire entendre la voix d'un public nombreux.
51. Téléphone musical.
52. Film Edison.
53. Commutateur de station centrale téléphonique.
54. Photographie du chemin de fer électrique d'Edison.
55. Télégraphe autographique à impression chimique en lettres romaines.
56. Télégraphe Morse autographique à impression chimique.
57. Appareils téléphoniques.
58. Appareils téléphoniques.
59. Téléphone de quartier.
60. Téléphone domestique.
61. Electro-dynamomètre pour régler la tension aux stations centrales.
62. Galvano-thermomètre à mercure.
63. Téléphone quadruplex.
64. Performeur du téléphone automatique à lettres romaines.
65. Performeur du téléphone automatique à lettres romaines.
66. Chef du performeur du téléphone automatique.
67. Téléphone automatique à bandes réductrices.
68. Téléphone autographique.
69. Procédé de fabrication des lampes d'Edison.
70. Procédé de fabrication des filaments de charbon.
71. Spécimens de lampes.
72. Spécimens de fibres de l'Amérique du Sud.
73. Spécimens de filaments en substances carbonisées et en graphite.
74. Verificateur des compteurs.
75. Table à copier du téléphone chimique autographique.
76. Plans électriques d'Edison et plans à main.
77. Plans électriques en fonction.
78. Presse mécanique du plan électrique.
79. Table de lecture avec lampe portative.
80. Boîtes à électro-motographies.
81. Principe de l'électro-motographie.
82. Vitrines à électro-motographies.
83. Téléphone duplex.
84. Téléphone imprimant des heures et marchés.
85. Boîte à pression.
86. Boîte à dépression.
87. Boîte à élévation de charbon.
88. Téléphone à entraînement magnétique électrique variable (Org-Telephone).
89. Collection de bouteilles de Leyde à vide.
90. Micro-cosmisme.
91. Micro-cosmisme.
92. Appareil de démonstration de la force électrique.
93. Régulateur.
94. Lampes renversées pour éclairage en dessous.
95. Interrupteurs automatiques de sécurité.
96. Commutateurs de station centrale.
97. Jeu de lampes formant réseau pour éclairage.
98. Tubes à vide.

Fig. 2

PALAIS de l'INDUSTRIE

PLAN DU 1<sup>er</sup> ÉTAGE



10 20 30 40 50

EXPOSITION INTERNATIONALE D'ÉLECTRICITÉ

Salle Edison

Monsieur,

Nous avons l'honneur de vous faire savoir que MM. Ch. BATCHELOR, et OTTO A. MOSES, collaborateurs de M. EDISON, feront une Conférence le                   prochain, à 10 heures du matin, dans les salons numéros 33 et 34 du Palais de l'Industrie, sur les découvertes et les inventions de M. EDISON.

Cette conférence sera appuyée de démonstrations pratiques et d'expériences à l'aide des appareils qui sont exposés dans ces deux salons.

Nous vous demandons, Monsieur, de nous faire l'honneur d'y assister.

Veuillez agréer l'hommage de notre respectueuse considération,

Représentants de M. Edison,  
33, Avenue de l'Opéra.

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**END**

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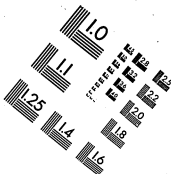
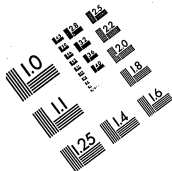
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